Transcripts of

(Unedited nor corrected)

Alaska Pioneers

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Jim King

I worked for the US Fish and Wildlife Service in Alaska for 33 years, starting out as a game management agent in territorial days when the Fish and Wildlife Service operated as a Game Department in Alaska and we did all the wildlife work that was done in Alaska then. So, it was a job that included things like duck banding and game surveys and then a big part of it was law enforcement and --

Well, there was some early game laws that applied to Alaska and some that were designed for Alaska, but they were kind of political and local oriented and it wasn't until 1925 that a real game law was passed and there was a set up designed for monitoring what was going on with the Game Commission, the Alaska Game Commission, it was called.

They hired local guys and even when I was hired I didn't go through the normal government process of being on a register or what not. I just filled out some employment papers and you know, never did take a civil service test, I guess.

So, it was a system that worked pretty good but what had been going on was that you had all this hoard of people that showed up with the gold rush and no rules so, they were doing what ever was handy with wildlife.

Judge Wickersham, an honorable and well respected important person in Alaska, he described going up the Cantishna River. He was going to climb Mount McKinley and he had a big group of people and they shot a moose every two days because they couldn't keep the meat and they'd have fresh meat for a couple of days and they'd have to get another one. He did comment on that, that it was a shame they were wasting all this meat.

Well, that sort of thing was going on, foxes were worth a lot of money and some trappers would go out and shoot a moose or a caribou and fill it, you know scatter

strychnine, strychnine all around and foxes would come. And they'd, they'd pick up the foxes but also an array of birds and ravens and raptors of one sort or another and bears and wolverines and those things would become a really unattractive mess for if somebody had been using strychnine. So, those early game laws ended the use of poisons for one thing and, and there was a lot of support for that.

Yes, that's right. The, let's see there was a, Alfred Brooks, who the Brooks Range is named after, wrote a book about Alaska resources. He was one of the first people to talk about the oil seeps on the north slope, which the natives of course, knew about. That they could burn this stuff that came squirting out here and there or bubbling out.

But, he had said in this book, that he wrote somewhere in the early part of the 20th century, that it was too bad that the beaver and the martin and the sea otter were on the road to extinction and would soon be gone and, but that was the price of progress. And so then in 1925 for the first time there was real interest in, in curbing that form of progress to a certain degree and so, they did a good job.

They stopped the, those early guys, they stopped the use of poisons, market hunting and this business of wasting meat, because you couldn't keep it. And all the really wasteful practices and the people that lived in the bush by in large supported that. And the game wardens were kind of part of the country and were not considered oh, invaders or government bureaucracy that was being abusive of the people. They could see immediately that this was helping.

Well, there was a guy named Sam White that lived in Fairbanks in the late 20's. And when they were just starting to develop airplanes and he had a big dog team and he described as a group of or a pack of free thinking dogs that he would tie up to his sled and go off looking for violators with the dogs hooping and howling.

and spend all his time tending his dogs. And he was the one that recognized the possibility of airplanes.

And I think it was 1929 that he learned to fly and bought a little airplane and flew out and caught somebody doing something wrong, shooting cow moose or something. And he proceeded to use this airplane some and he got a lot of criticism from it. And there were memos in the files when I went to work in Fairbanks scolding Sam White for being out in his airplane on working time.

He went and did a moose count with his airplane and there was a memo telling him to take annual leave for the time he was in his airplane and get out with his dog team and do a proper moose count.

So, there was a lot of that and, it got rough and he quit over that but by the time he quit he had pretty well set the pattern of using airplanes. As far as I know he may have been the first person in the world that tried to use airplanes for any kind of conservation work.

And I think the thing that really got it going was he and Clarence Rhode made a joint patrol along the border with the Canadian Mounties. And there was a lot of illegal traffic and fur back and forth across the border and they were able to gather up a number of these people that were doing that.

One of the things was that Alaska had a bounty on wolves so every Canadian was trying to send his wolves to Alaska to get the fifty-dollar bounty and things like that were going on.

Well, the biological survey went back, what to the late 1800's but in 1940 I think it was that the Biological Survey and the Bureau of commercial fish or the Bureau of Fisheries or something were combined into the Fish and Wildlife Service so that was, that was eleven or twelve years before my time started.

Well, this border patrol with the Canadians well, that kind of caught the public fancy. And there was stories in the newspapers about it and got the attention I guess, of people higher up in the Fish and Wildlife Service or Biological Survey then. And they begin to recognize the potential and then World War II came along and of course, everybody got drafted or into you know.

World War II hit Alaska pretty hard and Alaska was invaded and that had a dramatic effect on everybody that was there. So, the Fish and Wildlife Service kind of almost vanished during that period and there was a big influx of military.

And perhaps another abusive period on the wildlife. There was a lot of controversy over that and books have been written about conflicts with the military. and but, After the war then this rebuilding process went into effect.

Clarence Road had, had been on this border patrol and he became first in, he learned to fly as a result of that and then spent some time setting up an aircraft division in Anchorage. And as a result of, of that work, he kind of caught the attention as a good manager and organizer. And he went on to be the regional director of the Alaska region. And he wanted everybody in the organization that wanted to fly, and he encouraged young people, like me to get a license. And, and you know it was easier to learn to fly then to, to not in a way.

I was stationed in Fairbanks and we had three airplanes there then and I think there was only four agents.

Starting, I went to work in 1951, in Fairbanks, so.

I went through the normal you know, flight school kind of thing in Fairbanks.And then they had a rule then that you had to have a license and a hundred hours of experience before you could then go through a check ride with the aircraft

division people. And then initially you would be authorized to fly under somebody's direction. And there was a very experienced pilot in Fairbanks and in charge of the station. And I flew with him a lot and, and you know for the next two or three years, after I got authorized to fly, I was supposed to not make any trips that I didn't check out with him and --

Well, I was, the beginning of waterfowl surveys was occurring then. You know this was the same period that they were developing in the prairies. And we were a little behind so initially in the early 50's some of the game management agents were doing waterfowl surveys in their own districts. And it produced a product that was hard to deal with.

There were some biologists then who in Juneau and other places that were trying to put a forecast to the fall flight. And as soon as he could manage it Roads wanted to get a full time waterfowl biologist assigned to this.

And so about 1956 he brought on Hank Hanson who had been a World War II fighter pilot and an instructor in waterfowl at Washington State. And had worked for Washington State Wildlife Department doing waterfowl, duck work.

And so, Hank kind of reorganized these, initial efforts that the game agents had been working on. And the other key figure was Dave Spencer, who had been involved with starting transect surveys in the prairies, and he did the first waterfowl surveys on the Yukon delta in 1949.

And well that was when descriptions of the waterfowl, before that people just talked about clouds of waterfowl, or that kind of thing but no numbers. And Spencer identified the big goose nesting areas on the Yukon delta for brant and emperor geese. And he wrote a paper called Alaska's or American's greatest goose brant nesting area. And it was the first real description of that except oh, there'd been people on the ground before that had come before like E.W. Nelson

who toured with a dog team on the Yukon delta and Olaus Maurie and some other people had come by dog team to Hooper bay on the Yukon delta and then stayed till mid summer and they described the birds there in some detail.

And there was two or three books written about that but it wasn't till these airplane surveys that you could really describe what was going on, on the Yukon delta and that was sort of true of all the big valleys in Alaska and the big coastal plains.

Well, that started in '49 with Spencer extending the systems that he'd helped develop on the, on the prairies.

Well, they set up a 16 mile strip usually marked with a pencil on a map and then the pilot and a person on the right would fly along this strip at about a hundred feet and counted all the birds within an eighth of mile. And there were various ways to learn how to judge the eighth of a mile strip. And so, if you flew a 16 mile transact and counted all the birds for an eighth of a mile on each side, you had a four mile square sample, that would be a quarter of a 16 miles.

And so then you could take the data from that and apply random sampling statistics to, if you did enough of these things to determine you know, some sampling error and come up with a pretty good figure. You learn pretty quick whether you need to do more or you'd done enough and that sort of thing.

Well, then after Spencer started do that on the Yukon delta, it wasn't known how to set these things and that '49 survey he, he did a variety of patterns with these things and then other people set them up in the other valleys. It became evident that the really thickest, densest duck populations weren't on the Yukon delta they were on the Yukon flats. Right in the northern part of the Yukon river valley which just touches the Arctic circle.

And people hadn't paid much attention to that area before the airplane because in the summer time it was just a big boggy place. It was hard to get around. The natives there moved to the river in the summer and then the country was pretty empty.

In the wintertime, people were running around with dog teams and hunting moose and trapping but in the summer it was just, people weren't out there until airplanes came along. Well, there was a little bit of people out first thing in the spring shooting muskrats but after the muskrats were gone, all the nesting season, the area just wasn't, wasn't useful.

Well, it came here to Patuxent and was used in, in the forecasts and the regulation setting process and, you know, it evolved over time. One of the things that of course was immediately obvious was that you didn't see everything when you were flying a, you know going at 90 miles an hour across the tundra and things are going by pretty fast.

And so they started working on a correction factor for the things you didn't see and there was a lot of work on that done in the prairies where they could send a, a ground crew along a road at the same time they were sending an airplane overhead. And you know, they actually could do it simultaneously and the guys on the ground would come up with a figure for what was on the lake and then compare with, with what the pilots saw, lake by lake actually.

And that continues and they do change the correction factor every year in the prairies but that doesn't work in Alaska cause there wasn't any roads to, to run down. So, they had some sort of standard correction factor for a number of years. I don't know how they came out with it but, it was very, way below so for a number of years it showed Alaska didn't produce very many birds because we didn't have a proper correction factor. And actually Bruce got into that with a helicopter a few years ago and, and now there are pretty good correction factors

for Alaska that show that Alaska actually produces a lot more birds then were originally thought. This is always kind of a discovery process.

Well, yeah, it started with the district agents you know, and then statehood came along and, and law enforcement authority went to the state for wildlife. And so the game management agents, such as myself, were either transferred outside or, or went into another job. And I became a refuge manager then and then I was the refuge manager on the Yukon delta for a few years and then switched. to

Hank Hanson transferred to, actually to, to this area, to Washington and so I then had the survey job which I did for 20 years. But it was kind of a, initially it was a discovery process.

There were more oh, little river deltas that we looked at and we looked at distribution of swans and separated the trumpeter swan from the, the tundra swan nesting areas. We got more into banding birds and determined where the, see a lot of the white fronted geese from Alaska. They're all over Alaska, half of them go down the Pacific flyway to California and the other half go east of the mountains to Texas.

And you know, these were kind of exciting things to learn. And then in this period the new states first senator, one of the first senators, Ernest Greening decided he needed to bring home a big chunk of money to improve the economy in Alaska. And the, the way he was going to do it was to dam up the Yukon and create the, the Lake Erie size impoundment and the biggest hydro project in the United States, bigger then any other hydra project in Russia. This sort of flooded the entire Yukon flats. And it, the dam was to be at a little village called Rampart so the project became the Rampart Dam Project.

And there was enough concern at that time there was oh, legislation requiring wildlife studies for hydra projects before they were, were done. And so there was

so many to, to study the fish in the Yukon, which were important. King salmon and dog salmon both came that far up in big numbers and native populations were dependent on these fish.

And then these early transact counts had shown large numbers of ducks on the Yukon Flats so we had two years to do a duck study there. Cal Lensing set up plots and did production studies and I spent two summers there banding ducks. And we banded about , I think 18,000 ducks that were a variety of species. That video you had, showed people at Canvasback Lake. We named that, We caught some Canvasbacks there.

But the interesting thing about these ducks that we banded, there was they distributed. I don't know, to 40 other states and all the provinces to Ontario. And the canvas backs that we caught there, lots of them wound up in Chesapeake Bay and they were hunted in places like Fingerlakes in New York. We got a lot of our bands and the, oh, the lesser scaup were hunted heavily in, in Minnesota and all the way down the Mississippi flyway to Louisiana in, in big numbers. And that's a, you know, our survey showed that scaup were a big producer on the flats, so this was kind of exciting and suddenly wildlife people began to think more about hey, this place is producing something for us. and the International Association of Fish and Wildlife Commissioners, that's an organization that changes it's name every few years so I probably haven't got it right.

(Tape change)

Well, Clarence Road who was the regional director in the 50's was a pilot and --

Well, there were extensive ground studies which is necessary to you know, count ducklings and that sort of thing and Cal Lensing did these plot counts to get a feel for the productivity of the area and then I did this banding and these birds

just went swish all over the country and some of them got as far as the Caribbean and some of them got as far as Panama.

And it showed that here this valley in Alaska was producing something for people all over North America and Central America and it is a unique place. I don't see people talking about what a unique thing this Yukon Flats is but it's, we used to talk about it as a sun bowl because it's on the arctic circle and it's protected from the coast by mountains in all directions and so protected from storms.

And the arctic sun just goes round and round in the spring you get a type of heating that's not normal in the arctic because of the protection the hills give it. And these lakes we were banding ducks on, we actually measured 70 degree water temperatures, which I don't know if there's anyplace in Canada you can find that on the arctic circle. And, and we used to laugh about these, they had a program about Hawaii calling and they'd give the water temperature and the air temperature and they'd both be close to 70 and we would get that on the Yukon flats in the summer.

So, what you have is a, is a type of productivity that is similar to the best water productivity of the Canadian prairies and Minnesota and the Dakotas. And the, the duck fauna and densities are equal to the best anywhere in the country. So there's about 20,000 square miles, something like that on the Yukon flats that would have been flooded and this is this 70 degree.

I think your, your other video said something like 30,000 lakes or something like that, but there's ducks everywhere and other birds too. It's the highest density of ducks in Alaska. The warmest summer temperatures and the greatest variety of ducks and other birds. And of course at that time passerines didn't have a high visibility in service activities and we didn't even look at all the passerines which they are looking at now.

But you know, some of us were kind of bird watchers and we did note the different varieties there that you wouldn't see anywhere else in Alaska. So, anyway I had an interesting personal aspect to that.

I got married the spring before we got into this banding, so I rented a cabin in Fort Yukon and that was sort of, we laugh about it now, that was our honeymoon home, Fort Yukon. But anyway, these ducks went so far and wide that it caught the attention of, particularly the International Association of Fish and Wildlife Agencies and they talked to the big conservation organizations and a lot of the state game department directors, all registered strong objection to Rampart dam.

And Ernest Greening, who is a really eloquent speaker, I think he was one of the great speakers in the Congress at that time, was preaching, 'we've got to have this electricity. And it got to be quite a, you know there was a lot stuff in the newspapers and the reports and booklets came out. And people all over the country were aware of that and this was the first, I guess ,I wouldn't say that but it was one of the wildlife issues that caught the fancy of, of the country.

So then it was, about a few years late, when the statehood act had granted a million some acres to the state of Federal land and it took a long time to, to sort that out and decide which million acres they were going to get.

And then the native people came in and said well, this is our land and they filed claims and Congress was working on that. And then it was Morris Udall and Congressman Sailor, I think a few others in Congress decided well, if, if we're going to decide what the state gets and what the natives get we ought to decide what we want for parks and refuges. And let's see, I think it was Stuart Udall that, that put a hold on what they called a land freeze, which was holding up things like oil development or, exploration, Then he just established this freeze until all of this land stuff was settled and I don't know, what did we get, 50 million acres of waterfowl refuges?

Well, I was doing these waterfowl surveys then in all the valleys and I actually came back here and Cal Lensing (inaudible) and worked on the, we worked on the Yukon flats together. We came back here and analyzed all that banding. Cal did that and then I re-evaluated all the, the survey data and we drew boundaries and then they were submitted as proposals for refuges and that was the, what became the Tetlan refuge, the Yukon Flats, the Kuyukuk refuge, the Kanuit, Novitana, Selewick and Inonoko and Yukon Delta. And those were the ones I was involved in and the boundaries of those were, were really set on the survey boundaries that we had been using for waterfowl.

Well, if you look at a relief map of Alaska, it's quickly apparent that the biggest mountains in North America are sort of sprinkled across Alaska and in between these big mountains are extremely low valleys. And like Fairbanks which looks like it's in the middle of Alaska and in view of Mount McKinley is only 450 feet above sea level I think and so you have this combination of very high terrain and, and very low terrain--

Well, you have the highest mountains of North America scattered around in Alaska with these really low elevation valleys in the interior there and they're broad flood plains of big rivers. And in the interior, they're under laid by permafrost even though the summer temperatures are similar to say Minnesota. The annual temperature is way lower and you have this frozen substrate, which prevents percolation of water.

So, you have all of this surface water that, and then another nice climatic characteristic that makes Alaska important in this regard is that most of the rainfall in the interior occurs in August and September.

So you have a nice dry period in the spring for the baby ducklings to get their start then before freeze up. It starts to rain and saturates the soil and then it freezes in a saturated condition and the following spring it doesn't rain. But you have the frost going down and water coming up in the, in the capillaries so you have a nice rich vegetation even without any rainfall.

And kind of, well one of these neat systems that's developed there and so areas like the Yukon flats are just covered with these really rich shallow lakes. And because the water isn't percolating out and these were the areas that we were looking at for initially assessing the waterfowl that were going to be hunted in California primarily. But also in all of these other states down the Mississippi flyway and, and to a certain extent further east, Chesapeake Bay.

So, Patuxent was developing this system of evaluating annual waterfowl numbers. The spring surveys tell you, tell them what has survived the winter and made it, made a successful spring migration. And then some ground studies show how they, what kind of production they've had and this results in a forecast of how many ducks are going to be available to, to hunt.

And if the numbers have gone down seasons can be shortened and bag limits can be restricted or numbers are booming then regulations can be liberalized and so that was the purpose of all these aerial surveys. But then when the Congress decided they wanted to set up some refuges in Alaska, this fit right it.

We had the, we had the figures to, to sell these areas as valuable for refuges to the director of the Fish and Wildlife Service. When Cal Lensing and I came back here was Spencer Smith and I remember when we first talked with him he said, you know this was in the time that they were trying to oh, buy some refuge land in the Dakotas with duck stamp money and spending a lot of money to get a little production areas and he told us we want every acre of productive waterfowl habitat in Alaska that we can get and our instructions were to draw the

boundaries of these areas as big as we could justify and we did and we had fun doing it. That was a nice invitation really.

Well, there's no roads and there are trails all over the Yukon Flats and some of these other areas. But for getting out to the lakes where we were banding ducks and for doing the production surveys which were based on plots, the only practical way was to go by airplane. And so we had planes there at Fort Yukon for that and the same is true of the Yukon Delta.

The Yukon delta is more of an Arctic climate even though it's south of the Yukon flats, it's treeless tundra and but there's no roads and the only way to, there are rivers and sloughes that you can get around in a boat. But really, if you're going to go where the action is for the birds, you got to go the way they go and fly there.

Well, one of the things we worked on then was developing boats we could carry in the airplanes. And there was a guy in Juneau that worked with a manufacturer -and this was prior to good quality inflatable boats - those things didn't exist when we were doing these studies in the 60's. And he took a 16 foot fiberglass boat and cut it in five pieces and put bulkheads in the thing and came up with a deal you could stack up like a set of camp dishes. And then they had a pretty good little boat we could put a motor on. We, for a while we were carrying canoes on the airplanes outside, and even though we never had an accident with the carry boats outside it was illegal for non-government people to do that. And it wasn't a comfortable thing to be carrying a big bulky think outside of your airplane. Airplanes aren't designed for that except for the beaver and so getting the boats inside was, everybody was interested in that. Now, they have really good inflatable boats so, that's the way to go but, this camp dish arrangement was kind of fun for a while.

Yeah, well it was a dream of Clarence Road that he would have all of his people or as many as possible flying. And he used to say that the light airplane to his people is as the pickup is to wildlife people in other places. He encouraged everybody that wanted to, to fly. You know, some people don't want to fly and they weren't stigmatized for that. But it became a pretty routine thing and actually worked really well. The biologist--

Well, they started off getting some surplus military planes after World War II and they weren't entirely satisfactory. And then oh, about 19, late 50's they started getting Piper Pacers and Piper Pacer was a post war airplane, extremely well built. ut it, there again speed was something that would appeal to people so it was designed to, they shortened the wings I guess to make it fly faster so it's performance on skies and floats was, was not all that great.

But we used Pacers for a number of years and they were really good airplanes. I don't know, there must have been 10 or 15 of those purchased and then, what in the beginning around 1960, the Cessna 180 showed up and that was better yet although it wasn't, the 180, the Cessna's are not as good a cold weather airplane.

The Pacer was neat, we used to heat those with a plumbers fire pot. I don't think anybody nowadays knows what a plumber's fire pot is. There was a, you know, back then plumbing sewer pipe was joined with a lead seal and plumbers had this little stove that they'd melt lead on for sealing up these pipe joints. And going back to the thirties the pilots in Fairbanks had determined that you could put a little engine cover, a tent arrangement over your engine and put a fire pot under it.

If you didn't burn the plane up in due course it would get warm and you could start the engine. And then there was some tricks developed to prevent the thing from burning up. We would at night instead of just switching off the engine you

would switch off the fuel switch and then run the engine until it cleared the gasoline pretty much out of the carburetor. And the, you know the parts and the engine and then we'd always drain the oil out of it. And they designed quick drains so that you could put an oil can under there and get the warm oil out and then we'd take that to bed with you, take it in the house or where ever you were --

Well, actually the arctic wildlife range is not big waterfowl habitat so we never had any survey areas there. And there are waterfowl along the coast there but as a, it's not a waterfowl area so I never did do much work there. But going back to when I was a game agent we did go up there and look for caribou and things but in recent years the waterfowl people have been much more interested in the national petroleum reserve further west which is just now beginning to be developed for oil. So, I can't say a whole lot about the arctic wildlife refuge; it's a splendid area.

Well, of course there's sort of a, a lot of macho folk tales that seem to emerge from Alaska. And you hear people interviewing pilots and the first thing they want to know about is the accidents and maybe want to know if there were any babies born in your airplane. Things like that entered the image of Alaska pilots but as far as we were concerned that wasn't the part of it, the.

We had good airplanes and this aircraft division that they set up in Anchorage, Roads, it was Road's dream, but it was a guy named Theron Smith’s ability that put together an operation that the airplanes were in really good shape. We had some mechanical problems but we didn't have the sort of things that come from careless maintenance like instantaneous engine failures and that sort of thing, engines flying apart. We'd have engines that would have troubles but usually they would start running rough and you'd get somewhere where you'd could get something done about it and so we really quite worrying about engine failures in that sense and--

Yeah, by the time I came along there were what were called world aeronautical charts, wac charts. And they're 16 miles to the inch and they got pretty good contours. And you know, because of the way Alaska's laid out, you've got all these big mountain areas and then river valleys between and even going back to the 30's, when the pilots were learning to fly around without any maps, there is kind of a pattern to the country that you could follow and get around.

And then there are passes in the, in the big mountains that are rivers. We spent a lot of time following rivers if the weather would be bad you know, if you could get on the Yukon or the Tannana or the Cyacook you can follow the river and it was, it was you know sort of a, I don't know, it was a little bit of a sort of, I used to say I fly like a lark in the woods. You learn a little bit about the country and the weather and you use those to your advantage. Now, everything is instrumental and you don't need to learn the country as long as all of your instruments are working.

Well, you know in the wintertime we always carried equipment to warm the airplane up but also tents and sleeping bags so that we could, and food, so that we could stop if we got in bad weather. And after the, after I got into the full time waterfowl work, I wasn't flying in the winter much anymore. But these amphib float planes that we wound up using for waterfowl work, we'd always carry, and Bruce does today, tents and sleeping bags and a box of food as well as oh, some emergency rations if you smash the airplane all up.

But nobody ever has smashed an airplane all up and that's one of the intriguing things that's never really been analyzed, but for some reason now and in over 50 years, of this low level transect flying for ducks, there's never been a fatality connected with that.

And you know, you're breaking some of the conventional theories about flying where speed and altitude are supposed to provide safety and here the waterfowl

biologists cruising around low and slow and that's not supposed to be right but the safety record for the both here but in Canada and in the prairie states where they run these things. There's been a few oh, wheels up landings and minor fender bender type accidents, but I don't know of anybody that has ever been hurt of that group of pilot biologists and that applied to oh, the refuge people in Alaska as well.

Well, we've talked about it some you know, the Fish and Wildlife pilots talk about it some--

The safety record is good but it doesn't apply clear across the board in the Fish and Wildlife Service because there are some professional pilots and Clarence Road was one who have had fatal accidents in larger airplanes. Roads flew for airlines during World War II and well he was top of the line for professional pilots at that time. And there was another Grumman goose lost in Southeast with a bunch of fishery biologists, cracked up in the woods. And then after OAS came along there were some serious accidents with OAS pilots.

And then there was one refuge fatality with a guy that had, he was a military pilot, ex-military pilot that had been working for just a month or so and he cracked up in the Brooks terrain and killed himself and a state biologist. So and

When OAS came along, this was, you know the Fish and Wildlife, has it's own aircraft division and then it was transferred to this interior department thing and they worked out a, you know their own bookkeeping. And OAS doesn't have any accidents. If there's an accident then it's attributed to the agency that was paying for the trip so some of their pilots have banged up planes and killed Fish and Wildlife people. And it's a Fish and Wildlife accident you know, that's the way the record is. And so this business of the pilot biologist not killing themselves or their passengers is sort of buried in the record book but it's a true thing and I think maybe actually flying around low the way we do, you learn to get a feel of the

country better and you're watching the weather in a different way then people flying higher. One of the things that happens to the ones that stay way up in the air is suddenly they get a low ceiling and have to come down lower and every thing looks different and we're always low so if we get a low ceiling we don't even notice.

Well, I started initially flying in a Pacer, Piper Pacer which is a four place engine. And I think it was hoped that it would be a business airplane because they shortened the wings and made it go a little faster. The Service was the refuge people, particularly were using Super Cubs as well and the predator control people but we were using the Pacer and it had a range of four hours and forty minutes.

And we flew those all over but on floats for things like long trips. Course you had to land in the water where ever it was and at that time in all the villages in Alaska you could buy gasoline in ten gallon, five gallon cans. Two five gallon cans came in a wooden box and so, and those boxes and the cans where valuable material but we spent an awful lot of time carrying boxes and cans down to river banks. And a lot of time in the evening looking for places to tie the plane to in case the wind came up. And that was a big aspect of operating on floats, in some places they had barreled gas and we'd roll these barrels for half a mile to get them down the river bank and that was a good part of your day when I first started doing surveys

And actually another problem with the floats was the duck surveys come immediately after breakup in the spring, so not all the ice is gone and places are short of gas. They haven't had their first supply boat of the spring yet. So, we had to contend with all of that.

You know, Hank Hanson and I landed at Anvick one time with about a half hours gas in the tank. We thought we were nearly out and the guy at the store said

well, it would be about 10 days before we could fill up. This when he was expecting his first supply. And we were standing around in the store debating this deal and what to do and couldn't think we had enough gas to get anywhere. And people came in, Anvick's not a very big community, and here were a couple of strangers in town so everybody had to come look and finally some old guy said well, he had found this barrel of gas floating down the river and he didn't know whether he ought to put it in his boat because it was, said aviation on it.

And so Hank assured him that it would be terrible for his boat but, that he could help him out and give him enough money for his barrel to, to replace the, so he bought that for a good deal more then the replacement cost but things like that would happen.

Then, we used to go into the inlet cleat and they'd always be out of gas so Hank set up the deal when he'd come in in the spring he's buy enough gas and pay for it for the next spring and they'd keep his gas there all for him and the whole town'd be out and that worked. It was interesting that they never let him down on that.

I described how operating on straight floats was awkward and then this was another one of the Dave Spencer innovations. The Eddo float company came out with the first set of amphibious floats with retractable wheels. And the floats and he ordered one of those for the refuge, the Kenai refuge and nobody liked to fly it. It took a long run to get it in the air and it, it wouldn't climb and I learned much later that this was a function of the center of gravity being too low. You know, pilots worry about fore and aft center of gravity but engineers know about vertical center of gravity and if it's too low you can't pull the nose up and climb, you just pull the nose up and it mushes.

So, that was what this plane did but it, as long as it was in level flight it was fine and I tried that out and I was making all these stops for my survey route and hey,

that was just the deal, no more looking for tie downs on the river bank or packing boxes of gas around. I could pull up to the gas pump and tie up at the, on the ramp there and it would, it would save one or two hours a day out of a survey day.

And so it was kind of neat because then suddenly I had exclusive use of one airplane and I could leave my stuff in it. You know, that aircraft division operated like a motor pool and the planes people thought were good were in demand and so you always had to take your stuff out and what not. I can, I could keep this amphib and it was, oh, there were some other peculiar things with it. The, there was electrical switches in these floats that didn't always work and sometimes I couldn't get them down to land on the airport and I'd have to find some water and go down and shake the switches. And one time I got them, one side up and the other side down and I finally had to land it that way at the airport at Bethel.

But by in large it was a good airplane for me because I didn't want to climb. I was staying low and I didn't need to go into short lakes, I could land in rivers and I used to.

They were using these World War II bombers to carry loads of water out for forest fires in those days and they'd put too much load in them and they'd take off there in Fairbanks and be about a hundred feet in the air at the end a three thousand foot runway and I used to say the only plane that cross the far end of the runway lower then I do is those Boray bombers called them because I couldn't get the 180 up with that. so I used that for a while and I liked that airplane and then they started getting 185's and one 185 was just enough bigger of an airplane that it could carry these floats better and you had good rate of climb and a little better speed and good take off performance and I used a 185 for a while. They were kind of the standard and then the Service got Beavers with amphibious floats. And they're a bigger airplane and a good deal more rugged so you didn't break little things on them.

I don't think I ever took a Cessna in for a hundred hour inspection that the door latches were damaged and little things like that that didn't really effect the operation of the airplane. But they would, things would happen to those Cessnas and there were springs on the rudder pedals, I broke one of those springs in Bethel one year and so I flew it for a week or so and I had to keep about 10 pound pressure on one side of the rudder petals to fly straight but that sort of thing didn't happen much with the Beavers, they were just, just better built. They're built in Canada.

So, they were great airplanes and then this Theron Smith who, he spent a lot of time flying in Grummans. The Grumman goose was a really great airplane that was designed during or used a lot in World War II by the Navy, twin engine amphibious airplane. And they used them, the Coast Guard used them for rescues and, so they were good for sea mammal surveys and fisheries patrols and that sort of thing but they had some limitations too.

And this Tharen Smith was a bit of a dreamer and he wanted an amphibious airplane that would fly about 12 hours and carry biologists and in order to accommodate the biologists, the Grummans were usually a two pilot airplane and they would fly them on instruments. And so that meant the two front seats were occupied by the pilots and the biologist that might be paying for the trip had to sit behind and some of the.

Carl Kennyon used to do sea otter surveys in the Aleutians and he's always be needling Smith about having to sit in the back and then he used a DC-3 for that survey so Kennyon would be perched on a bar stool in an isle looking out the front window. So, there was a lot of good natured banter on that but Smith was storing this all away and he designed this modified Grumman that he actually described this to a Senator who he was taking for a ride, a female Senator her, Congressman she was Interior or Committee Chair Julia Butler Hanson.

I think her name is still around but Smitty in some way charmed her and she came up with money enough for him to modify his Grumman. So, he stretched it out a little and put a couple of seats behind the pilot and co-pilot so he could have a couple of biologists in there with pilot quality visibility and added another six or eight hours of fuel capacity. And put these Garrett turbine engines in the thing and just designed the best airplane for these Aleutian Island sea mammal surveys and that sort of thing and it was a very successful airplane.

OAS didn't like it because it didn't fit their pattern and they finally sold it but at this point they were developing the Garrett air research engine and decided to put one in a beaver. And so they took an Army surplus Beaver and stretched it a little bit, added tanks. These turbine engines use more fuel per hour then a piston engine so they made a seven hour airplane out of the turbine engine mounted Beaver.

And that became, they tried it with some of the other projects but it turned out that it was more useful for waterfowl work then anything else. And Beavers are heavy if you're using them, no, if you're not using them for rather heavy work or long distance stuff they're more airplane then you need.

The Cessnas are better. If you're batting around in small areas where you don't need a lot range but for these waterfowl surveys the seven hour range was neat. The ability to, you know you can't really sit in an airplane and count ducks for seven hours but with the amphibious floats you could stop and we'd always have a picnic on the tundra somewhere on these long survey days.

And then have a full set of gear so if the weather gets bad you can land and camp comfortably and we usually had a good time when we'd get stuck some lake that we hadn't landed on before and camp. And you know, walk around and learn a little bit about a new area and the same was true for lunch stops. You

know, you always learn something when you stop at a strange lake that you've never landed at before. And the birds around and animals around and it was part of understanding the country I think was, was just. You look at the bottom you know, sometimes you get stuck on it and you had to turn the airplane around so you've got to feel for the bank and find a parking place and just having a little experience in the country that taught you something about it that you wouldn't have thought of if you were just looking out the window or well.

Then this turbine had another nice characteristics with this regard in that it has a reversible prop so instead of getting out and fiddling around with your airplane when you pull up to the bank, you just put it in reverse and back off.. If you anticipate your landing you can turn around and back in and so you're ready to go.

So, that was another kind of a break through for waterfowl surveys. It flies a little faster, a little farther, you get a little more done in a given day with less expenditure of time and effort. And, and though we couldn't do the kind of surveys that are being done today with a Pacer on floats to just, you get two or three times the productivity out of a day that you would with using a little plane like we started out with.

So, now that, that turbine Beaver that was kind of an experimental thing to start with has been modified some since and rebuilt and Bruce Connet takes it to Mexico every winter for winter surveys and then it made something like four trips to Siberia.

It was the first float plane they'd ever seen in that part of the world because most float planes burn gasoline and in Russia they use these big turbine helicopters to get around the country and they burn jet fuel so here was a float plane that burns jet fuel so it could operate in Siberia where none of the other American float planes can do that. And so, and now they've got it loaded with modern

electronics GPS for navigation and moving map thing that you don't have to carry a paper chart anymore, you've got a little video screen and you can, the map keeps moving and little dot, where it shows you where you're at and you don't have to look out the window anymore.

Well, the turbine Beaver is is really good and it's been extensively modified really from a standard Beaver. Another aspect of that you know, the turbine Beaver was that they, they stretched the fuselage and added much better windows. The turbine engine is smaller then the big radial engine. And instead of building a big photogenic cowling on the front they put it in a narrow cowling which means that you can look out and see the toe of the floats ahead.

And and just has way better visibility and one of the things I always did, we were all the time out, I was doing these surveys we'd use, put our data on a tape recorder, a voice recorder and I'd bring these things back and transcribe the data off them. And oh, we'd do that at night and for a number of years I was just a one man project ,so I'd, I'd have to find somebody to be my observer every year.

And had a long series of different people but I saved all these tapes and then after Bruce Connet took over the project some years later, he and his assistant Jack Hodges got some money and they took all these tapes going back to the 50's and had a guy sit down and re-transcribe them and the way we did it in the past .And the way most of the other survey data is done, both sides record on the same data sheet and so individual differences are lost.

And what Bruce and Jack Hodges did they re-transcribed all these tapes and separated them and then did computerized it and did some comparisons between myself and all the different observers I'd had. And then between the later crews and what they learned out of all of this was that there hadn't been much. It didn't seem to hurt to change observers, that there'd be a rough day or two to start and then after a few days of duck survey both sides would be up to

speed and that would go on in good shape but the one thing that really did change was there was a sudden jump in the numbers of ducks in Alaska when this turbine Beaver with bigger windows came on the job.

Well, the aspect that I mentioned about the improvement in the number of ducks that a person can record out of an airplane depending on the size of the windows. So any airplane that was designed for particularly waterfowl where it should feature big windows on both sides.

You know, we've used that turbine Beaver for eagle surveys too, well that's an entirely different ball game. We're, instead of flying straight lines here following shore lines and the observer on the right is making observations and recording locations and that puts the pilot on the opposite side from the shoreline he's following and in this case you need good visibility from the left seat on the right side and the turbine beaver is pretty good. Lots of airplanes you can't really do that because you can't, you don't have the visibility to the right.

So, it might be that the windows could be even improved some if they were designed you know, starting from scratch to build an airplane to give an even better visibility and less you know blind spots. Every post and every contour of the panel are blind spots when you're looking out. So, developing that kind of visibility is important to wildlife flying but evidently is not important to most pilots, all they want to see is sufficient runway to land and enough visibility to see if there's other airplanes that are, might be a conflict with.

Well, you know, as I was talking earlier, for the waterfowl surveys you really don't need to go into little lakes, if you're hunting sheep or things like that, going into high elevation lakes to pack out loads of meat that's a whole different scheme of things. But using pretty good sized lakes, when we used those airplanes a lot for banding ducks as well and hauling banding equipment but there again we're

always using lakes with plenty of space. There was no need to go into little places.

So, that's not so critical ,if you could, a more efficient engine would be a help so that you were burning less fuel. And I think that turbine engine that the beaver has now that's got more power then you use. The Beaver airframe is restricted to 121 miles per hour and you know, that engine would probably pull it at 300 miles an hour but you're not allowed to do that it might, the engine might go off by itself at such speeds, leave you hanging there. So, a smaller engine using less fuel.

Using a lot of fuel is, you know it takes time to put it in for one thing and here, up there on the wing, fiddling around when one of the things. I asked the aircraft division for one time was some handles up on top of the wing. Cause you, you know a lot of times it's a nice day and you climb up there to fill your tanks and it's fine.

But I remember one time I was filling up at a dock in Katchacan and there was a filler way out on the end of the wing on a standard Beaver and I was out there eight feet above the water filling the tank and a sand boat came by making a three foot wake and that wing started to go up and down about I don't know, it must have been about 10 feet and all I had was a, was a gas filler hole to stick a couple of fingers in. I felt fairly vulnerable out there.

So, Jerry Lawhorn, he did put a couple of posts, called them goat ears or something on top of the wing that I could hang onto and we used those for a while and then they decided it was, I thought they were great but they did more study of it and determined that this was causing a little flutter on the tail. I hadn't noticed that but so, they had to take those off.

But, anything you can do to the airplane to make it easier to service you know, like airline pilots or even most fix based charter operators, we were always fueling our own planes and adding oil and that sort of thing. So if that can be simplified, it just saves you time.

Another aspect of this is you know, a big airplane is, is a pretty complex machine and there's a whole lot going on inside of those engines with the controls and everything and the simpler you can get those controls the easier it is for the pilot to spend his time looking out the window instead of manipulating things. And that was one of the things we didn't like about the standard Beaver with the radial engine that if you're going to change your power setting you had to move the throttle lever and then you had to adjust the mixer control, the carburetor temperature and you had about three or four things to do.

So, you are doing that and you're not looking out the window. Well, the turbine Beaver is better, a lot better. You just had one lever and so you could be looking out the window and add a little power without studying the panel.

Well I would say basically waterfowl management in North America in the 50 years, I've been associated with it is pretty successful. The, you know, coming out of the dust bowl era, there was a lot of discouragement about waterfowl and you can see it in their reports and literature and even things like I talked about earlier where Spencer Smith said we've got to get every acre we can.

And if you look at the total figures now the duck numbers are in total continent wide about the same as they were in the 50's. There's been some ups and downs and some periods of worry. So, basically the things the Service is doing and the things you know other contributors like Ducks Unlimited are working and seem to be. But there are some places that are causes for concern.

In Alaska, the geese on the Yukon delta took a big dive and there are some provisions that the Service has made. It's a difficult thing because it's all wrapped up in cultural aspects of the native community there but bit by bit they're getting the Upic Eskimos to recognize that they need to contribute too or we're going to lose some of these stocks. But there is a lot of vacant habitat for geese in western Alaska that was a lot more areas that were occupied by the first bird reporters.

So, that was one thing that's down and I think the Service has done a good job but I don't see an objective to return to the level of abundance that the early people found. They've set some numbers objectives and I suppose when those become accomplished maybe they can be raised and eventually geese reestablished in some of these areas that are now vacant.

So, that's one area of concern and I guess the other one would be the well another goose area that's a matter of concern is the Copper River delta and the dusky Canada geese which that area was up lifted six feet by the earthquake in 1964 and it changed the whole hydrology of the area and changed the way predators had access to the goose nesting areas so there's that problem but also they go to a very limited wintering area in the Walamet valley so that's an area that is a matter of concern.

And then with the ducks, the ducks seem to being doing well in Alaska, the dabbling ducks, some of the diving duck species are going down, some of it may be just normal fluctuations. The oldsquaw duck, which has recently been re-christened the long tail, duck numbers are going down and nobody's quite sure.

There because they're not a big species in the hunting bag and they don't occupy habitat that seems to be damaged much. But the Service is starting to do some research on the diving ducks and that's good and ascrotis is another species that's getting some attention for the first time you know,

It used to be the hunters weren't returning the bands there was no need to pay any attention to them and then we got two species of eiders that are on our threatened list but are fairly abundant in Siberia, the stellar eider and the spectacle eider. And it seems to be turning out that one of the serious things that happened to those species, they used to be quite abundant.

When I was refuge manager on the Yukon delta, I didn't have any trouble finding both those species. to take pictures of the females on their nests and I got pictures of, the females aren't very spectacular but the males are. And I could, you know that was one of the things I was trying to take pictures of and then a period came along where people going out there just didn't find them and so they were put on the threatened list and actually as a result of my petition.

That's the kind of thing you can do after you retire and that resulted in more money for eider studies, there was nobody looking at them and one of the things they found was that the eiders are picking up a lot of lead out there in those ponds where they nest and were suffering from lead poisoning and I don't think the natives have paid much attention to the lead shot, steel shot thing until that came up but they're learning about that and some of them are responding and you know those are things that take time and I think the, a lot of the natives out there are well, working on these things too, now to try and get the lead out and it's a problem. For some reason you know, there is always this theory that well, if you shot lead into the mud or into ponds with a mud bottom the, it would eventually go out of reach for the birds, I think there's more questioning now then there used to be on that score but these ponds on the Yukon delta freeze solid, the whole works, the water and the mud and everything and I guess there's some evidence that you know, like the fields in New England, the frost keeps bringing things up instead of letting them settle down and so they're not seeing it disappear so the eiders are a matter of concern and it's going to take some time to resolve the hunting problems out there on the coast where there's a strong

tradition for summer and spring waterfowl hunting. It's not a matter of nutrition anymore which may have been but I always think it would be like telling the rest of us that we couldn't have Christmas trees anymore you know, and we'd figure out ways to, it would take a long time to, for us to get used to not having Christmas trees. Some people would go on with it right away and others would try and sneak a tree in. So that's what's going on out there now and it's just taking time.

Oh, I think it's enormously important and –

The aerial survey thing, before you know, the flyway biologist concept went back to the dust bowl days when ducks were really disappearing and you read these stories from John Lynch and some of those other people that were trying to figure out what was going on and, and they had permission to ride in military aircraft and they had a terrible time trying to talk military pilots into flying low and slow and that didn't work, it just wasn't (cough) and they tried to do surveys in the prairies from railroad trains, they couldn't do them from roads because in the spring when they needed to be in there looking at duck production the roads were all muddy and they'd just get stuck and wouldn't get any surveys done but they could go down the railroad tracks and they'd try riding the passenger trains and somebody finally decided they could do better if they could get permission to ride in the caboose of the freight trains which went slower and had better visibility and all these things were tried but it wasn't until they started using airplanes after World War II in some cases ex-military pilots but some of the other guys got a few hours flying in a supercub or Cub then and like, John Lynch and started flying there you know, and before the airplane thing came by you know the regulations were set on the basis of, of winter inventories and a lot of that was pretty superficial without aircraft and when the airplanes came they then began to do a winter inventory which continues to this day but was really needed was, if you look at them in the winter they got tough weather to deal with and a spring migration so if you really want to put some precision in this thing you ought to

know how many birds survived to get back on their nesting grounds and then take a look and see what their productivity rate is, like how many ducklings they produce because some years even if they get back the weather's bad or the habitat is too dry (cough) or something's the matter and you get poor production. So, if you can figure out the production and the, a factor for the number that came back then you really can't do it. It's not a census in that sense. What you'd learn is whether numbers are better then last year or worse and you know, these surveys are so consistent now with airplanes that predictions that you get 10% more are valid. It comes at the time you need it and then the regulatory process is kind of a mad scramble to analyze data and set regulations that will give you the level of kill that you think you can stand and you then get them printed and out to hunters before the duck season starts so, really it's a grand production and it seems to work.

Yeah, well, it was recognized first the need to have good information in the spring and different methods were tried to achieve that and it wasn't till enough people, enough biologists got flying and they discovered that they could generate the broad scale, you know contin, continent wide level of information that became effective in, in you know, predicting what birds were going to be on the hunting grounds and how many of them you should take and then the other thing that happens is all this information is recorded and of course it was recorded in files initially but it's now all well computerized. Every year you know, it's an art predicting these things even with the information but now with 50 years of experience behind that all adds to the picture as well and the people at the ducks can say oh, well this is the year it looked like 1965 and that year we did thus and so and we killed a little more then we should so you know, you get that kind of experience or maybe we could have killed more that year so, it's still sort of an art but it's improving with experience and will continue to improve I'm sure but the basic system since the airplanes came in really hasn't changed much, a few adjustments here and there and one of the interesting aspects of the sampling procedure is that it violates some rules randomness that bothers statisticians and

it, it has to be sort of a trade off between randomness and the practical aspects of flying the airplane and how you can get out there and do things effectively and efficiently at a reasonable cost and then there's the human aspect of just recording visual information as, you know, it's not as good as, as what having a photograph or some permanent record so those things have bothered people and they talk about bias and this thing and there have been a number of, or several detailed studies that have determined that even though there are biases of this nature, it works and various professionals have criticized the thing and probably will continue to, in the mean time it's working. I guess that's what I wanted to say and the critics are looking at pieces to the whole picture, the whole thing works and it works because of the combination of, of aerial you know, aircraft equipment and the experience of the people doing the flying. There isn't, you can't talk air survey in collage and get a degree in it. It's something that's, and you really can't, there isn't a cookbook for it. It's something that's passed from experienced pilots to new pilots and it's working.

Well, I don't see any substitute for the –

Well, the, the aviation, the airplanes are essential to, to getting the kind of information that's necessary for managing waterfowl and another aspect of it is you know, you're using the medium the birds do, that's important in understanding what they're faced with and how their year is going and so I don't see any substitute for using airplanes. About airplanes in the future, well, the basic single engine high wing, there is a lot of low wing airplanes on the market and they're of course useless for this sort of thing. You have to have the wing above so you can look down and most of those planes were designed in the 1930's, the basic aeronautics and some of them like the Beaver was in the 1940's I guess, like the turbine Beaver that we've been talking about has a plaque in it with a manufacturer date of 1952 and you know, what, what I often think of people get quite excited when they see a nice 1952 model automobile on the street, think oh, that's a real antique. They don't think that with airplanes but

there's been tremendous oh, innovation with regard to materials and engines and power plants and at some point I think they'll be a lot of improvements that we don't necessarily envision now like you know airplanes that are riveted together with pieces of aluminum to a major degree. There are going to be lighter materials that are maybe stronger and if you get a –

Well of course, I think the flyway biologists have always had cameras and –

Flyway biologists have always had cameras and taken pictures and been interested in photography and in a few cases it's been useful, like particularly with snow geese because you've got good contrast between the background. We tried endlessly to take pictures of blank brant at Eisenbeck lagoon though and you don't have the contrast there so even if you had some kind of a computer sensor you probably wouldn't, wouldn't get it. The infrared doesn't work on brant because they're so efficiently feathered that they don't loose heat and you know, snow can fall on their backs and it won't melt and they're just not registering on infrared so, and then people have tried to oh, use movies and other gadgetry but to a certain extent you wind up with a pile of film that takes more time to analyze then, then you know, just a bunch of stuff. So, for the time being anyway I don't see a, a photograph substituting for visual. You know, they say that the computer that thinks better then the man will be here one of these days but it's not yet. I guess they do have computers that will count little blips if you can get the proper contrast or whatever but, it's not here. It's not on the horizon I don't think.

Well, David Spencer you know, was one of the pioneers in the prairies, he didn't stay there very long but he, he was a key in developing the transect survey techniques that we use today almost un-modified even though he did it with a pencil and a pad of lined paper and now it's done with voice recorders and computers but the technique has lent itself to you know, being dealt with by a modern technology and the basic observations are the same. So, Spencer was

extremely important and he was in Alaska, he, there was a couple of things about Spencer. He had this background prior to World War II he was in the refuge system I think in Florida somewhere but he spent a year in Wisconsin studying under Aldo Leopald and he worked on some projects with Olis Murie in Wyoming and when he came to Alaska people were still thinking in terms of how to get a sustained yield out of reindeer and out of fur bearers and you know, controlling wolves was one of the techniques that was used for conservation work and, and there was still a major effort to get rid of the keen-eye moose range and the kodiak, the keen-eye was in demand for home steaders and the kodiak refuge was in demand for cattle ranchers and the he was the first wave of biologists that weren't, the game agents were, were really thinking about preventing you know, law violations and developing regulations, hunting regulations and trapping regulations and, and I didn't realize this at the time but Spencer was the first one that had the sense of wilderness that you know, he was there when it was emerging amongst Leopold and his students and his associates and so he brought that to Alaska and I think a lot of the refuges were administrative order refuges which can be reversed by another administrator and in fact that was what had happened to the first I think they called it a sanctuary on the Yukon delta set up by Teddy Roosevelt that was abolished by Warren Harding in his wisdom. We don't know much about that. It would be fun to dig up the records on that. But, anyway Spencer was important in the, you know, we brag about our wilderness in Alaska that's going to be there in putuety and I think he deserves the credit for getting the agency as well as the other people in Alaska thinking in terms of the value of wilderness and that we need to, needed to do it now rather then think you know, there was quite a strong feeling oh, Alaska's safe we need to put our money in our effort down south where all the people are tearing things up and he did these first pioneering waterfowl survey then the next, well, Clarence Road was important with his attitude towards flying and that we should all learn to fly government airplanes if we wanted to and he really encouraged that and he got the money, he got it from Albert Day who was the Director that really, he had very good rapport with Day and we hear stories about how the

other regional directors were pretty irritated with Roads cause he got everything he wanted and they all had to struggle for what they needed but I don't know whether that's true or not but in any event Roads was important in encouraging the flying and then bringing Hank Hanson who sort of built on some of the early work Dave Spencer had done and he set up a program for not only doing the duck surveys, Hank Hanson started the studies on trumpeter swans. He tried to get a little banding project in each one of these valleys that in most cases are now national wildlife refuges and find out where those birds, you know who was using them and he set this thing in motion and then I followed Hank Hanson and pretty well, I built some on what he'd been doing but I didn't go in like so often happens when project leaders change and make a new start. I liked the work he'd done and I worked with Hanson quite a bit before he left doing banding and doing surveys and then Bruce Colnut came to work for me. He worked for me for about five years before I retired. I did the waterfowl project for 20 years and then Bruce has now been there for over 20 years and he's built on the Hank Hanson program and there's more money in the, most of the time until Bruce came along, I was a one man project and then I had Bruce for five years. Now there are three of them in the waterfowl project and Jack Hodges was the second one and he's a guy with a wildlife degree and a biometrics advanced degree and a good grasp of computer programming and when I left the project in 1983 the Service was using main frame computers in Alaska and had some in Anchorage but that stuff was still kind of on the horizon and I worked pretty hard with computer programmers in Anchorage trying to get oh, things like the swan data computerized and it was really hard working with a computer programmer that didn't know anything about wildlife. The thing that bothered me was they always wanted to change the data so that it would fit into their computer better. I'd have to think, well what are we doing this for anyway and I didn't, I didn't get very far with that. Well then Jack Hodges came along working for Bruce Connie and he was able to, he's a pilot too, he flies the turbine Beaver and knew how to write the programs to handle the data that was useful to the, that was easy for the pilots to manage as well as being, meet the standards of the migratory bird station here and he just came up

with all sorts of good innovative stuff and the desktop computers were coming out then so that all has happened since you know, I was still essentially with a pencil when I retired and now they've got really good computer capability and one of the things that's exciting to me I guess I mentioned this before is that so much of the data that I'd stored away in the files but never had a, a chance to completely work up Bruce Conin and Jack Hodges and they have a young lady there Dever Groves and they've been able to archive this old data and it's comparable with newer stuff and have turned out a lot of really good publications and papers and taken what was sub-grade literature and added it to the literature of, you know, of the peer reviewed literature of waterfowl science. So, what you've got is in Alaska a waterfowl program starting in 1956 to 2001 with very strong continuity and that's actually pretty rare in the government I think and kind of exciting and it was exciting to be part of that and Bruce is not to far from retiring now so whether it will keep going or not well, who knows but so far so good it's almost 50 years and it's set a good record.

Bob may have some other comments on that. This might be worth. Alaska's a long way from Washington DC and the Patuxant and because of the you know , Juneau's a long way from Anchorage and I think we had a level of freedom that, it's disappearing now but we could attack things that --

In Alaska we had the freedom to innovate I think, partly it was an aspect of a small number of people a long ways from kind of the establishment. Oh, I think the way Jack Hodges has developed his own computer programs is an aspect of that. He just did it and oh, we got into other areas. We got into things I got involved with eagle surveys. I don't think anybody down here is doing, you know, the waterfowl biologists--

(I had to turn the tape over so I missed some)

--- where there's an eagle nest every half mile on an average for hundreds of miles of coast and the game agent that I worked with in Juneau was watching this and nobody had any concept of how many eagles or where they were until we got out with the airplane and started plotting them and went to the forest service and said how can you allow these loggers to cut all these eagle trees when, showed them the bald eagle act and you know, allowing a law violations here and that resulted in a good program to protect eagle trees in the Tongas forest and we got involved with the, you know, I did some of the first sea bird surveys with an airplane because here was a oil industry talking about drilling for oil and they did in Cook inlet and at that time you know they were in the wild and woollies of Alaska and everything they didn't need went over the side and the Fish and Wildlife guys brought them up short on that and there were the tankers that were coming in to Cook inlet were pumping oily bilge and killing birds and so we all got kind of fiddling around with the sea birds and then when the oil development became more serious suddenly there was money to, to do some, some sea bird studies in Alaska and what they call the Auxcet program (inaudible) continental shelf, something or other and we had a good idea then of what we needed to do and how we could use airplanes to do it and but I did some air surveys in Bristol bay which was on the hot list for, for oil drilling that hasn't happened there because it's so important for fish but there were lots of sea birds in the water but also ducks as well so I said well, I can go out there and look at them, get some figures and I had a system of, I called it a saw tooth survey where I'd go out eight miles and back eight miles and go down the coast that way because most of the birds are close to shore. So, we had to freedom to do that sort of thing so we were ready when suddenly some guy from Washington shows up and he's got three days to write a program for doing studies for oil development in Bristol Bay and hey, we've been there and I can't remember that guys name. He was an interesting guy. He gathered a bunch of people together in the regional office in Anchorage like on Wednesday and he said I'm going back to Washington on Friday and I need to have a report on bird studies that are needed and he talked to the Fish and Game biologists and he

says I need, you know what you want for, for sea mammals and one of these guys you know, they don't want the Federal government putting any time restraints like that on them and he said well, we can do that, it would take us about a month and this guy says I'm going to turn in a report on the need for sea, for sea mammals studies in that area on Monday morning and if you don't have it to me on Friday, I'm going to write it on the airplane and but, he didn't have to say that to the bird people because we'd kind of been sniffing around and we knew something about where the birds were and that kind of, you know that went back. Are you familiar with Ira Gabrilson?

He was director for 10 years, Fish and Wildlife Director and but he was a real birder, birds was his passion and every summer that he was Director he spent a month or two birding in Alaska and of course being Director he could command ships and planes and cars and whatever he wanted and then he and Frederick Lincoln who was the guy who set up the banding lab produced a monumental book on the birds of Alaska and it was Gabrilson's observations and Lincoln's research really you know, there's a 50 page bibliography in that book and it's wonderful. But Gabrilson had paid attention to the, to the sea bird rookeries. He's got on these, they had some pretty good vessels at the time for fisheries work and, and he'd take these big boats out for bird watching, had a grand time. So, there were good descriptions of some of the bird colonies from Gabrilson of course, they looked up all the literature preceding and so, it was a little of following up on you know, we did know, knew something about birds and now the Service has a very good sea bird program as you described in your video of monitoring sea bird colonies but none of that was going on in the, in the 60's and 70's.

Well, having the Migratory bird office for waterfowl surveys in Juneau has been a sore spot with the people in Anchorage for a number of years. Juneau of course in the capital of Alaska and that's where the regional headquarters was in territorial days and then after statehood the regional office was abolished and

most of the people transferred and the, when I, when I came on as, as the waterfowl position then it was called supervisor of waterfowl investigations and what I supervised was myself mostly because people were disappearing in all directions but it was based in Juneau and I tried to move it to Fairbanks where I was familiar with but I was told it had to be in Juneau and I got settled there and I just barely got settled when they started trying to move me other places but Juneau's, my wife liked it there and it's a nice community to raise a family and I looked at the possibilities, let's see they wanted to move me to Portland first and I didn't want to do surveys in Alaska from a base in Portland so I managed to get out of that and then they, several times they wanted me to come back here and then when the regional office was established in Anchorage it's always bugged the regional staff in anchorage that that project's in Juneau but it's a good place for a project like that because it, there was a time when they took all the flyway biologists out of the regional offices cause the regional directors wouldn't leave them alone and they'd be called on to attend meetings endlessly and never would get their surveys written up and that's another interesting aspect of the duck survey business. The flyway biologists go out and do a survey and they have it available, written up, analyzed and available for distribution within a week or two and so often, in fact the norm for biologists is to go out and get a bunch of data and work on it all winter and maybe two or three winters and there's an awful lag between the field work and the finished paper and the flyway biologists well, they got things in order so zap it comes right out and I don't know of any other project that operates under that kind of a time straint. Do you Bob?

We were free of being called on the hall for every ceremonial event in the regional office and we had a nice office that had big windows facing down Gastanol channel, I could see the swans going by when they were migrating and occasionally there'd be hump back whales I could see from my office window and any ships coming into Juneau harbor and it was a pleasant place to work. So, I had a good office. I had a place my family liked. I had a, actually had you know, the kind of beach property you've got to be a CEO or a agency director to be able

to afford around here and I got five acres on the waterfront in Juneau and so it was a good place for my family and I just could see how I could take my family a suburban home in Anchorage or back here somewhere and Hank Hanson came back here before me and I remember talking to his daughter one time about, they had lived right in downtown Juneau and she felt like she'd, she was a teenager, she'd lost all of her freedom. She came back where she was dependent on her parents to take her anywhere she wanted to go and in Juneau she'd been able to walk or bike to all the things she was interested in so staying in Juneau appealed to me and I think the same thing with Bruce and it still irritates the regional office that we're there but I think they recognize that there's a good flow of information comes out of that Juneau office that maybe it isn't a good idea to interrupt that.

Cal Lensink

5/10/01

Q Your name, and then talk about your education and your career.

Actually I started out at the McAllister college and an English Professor there assigned us a theme on what we were going to be and directed us to the vocational files and at that time I was in Pre-med and it was in the vocational files that I found that there was such a thing as wildlife management and so I had to transfer schools right away and I've been pretty much on one track every since. I graduated from the University of Minnesota in 1950 and then took a year of post grad work there and then went to the University of Alaska for my masters degree and then from there if you don't have a permanent job, you continue on in school and I got a PHD from Purdue.

Q What is your employment history?

The, my earliest work was with the Minnesota Department of Conservation, one year one summer as a, working on a fisheries research crew and the second year on duck lakes surveys and then I worked part time in the winter and then went, went to Alaska after that and I worked on several temporary jobs as, when I was a student in Alaska and then in 1957 I went to work for the state of Alaska and worked for them three years when I began working for the Fish and Wildlife Service on the Rampart project on the Yukon flats.

Q Describe the Rampart project, what was that all about?

The Rampart project was a proposal pushed very strongly by an Alaska senator Greening, to put a dam across the Yukon river rampart and that would have created a, a power dam and a lake behind it of about ten thousand square miles which would have completely inundated the Yukon flats which is the premier

waterfowl production area in interior Alaska and fortunately the, the, the dam did not go in and actually a lot of the information that we collected at the time of the rampart project was used for establishing the Yukon flats as a national wildlife refuge. So, it—

Q What did you do as far as, were you surveying?

It was, as we were talking about earlier most of our work is surveys and censuses and that's what it was. We were trying to establish how big the populations were and how productive they were and we set up a series of 20 sampling plots each of four square miles which we had a census by foot and canoe three times during the summer, once for breeding population and then twice for broods and in total, and then we had some larger study areas in addition to our sampling plots but in total we hit between eight and nine hundred lakes every summer at least three times.

Q Describe what life was like there, the support systems you had and how self sufficient you had to be, sort of just get a feel of what Alaska was like.

The, well even yet my headquarters, the summer headquarters would be in Fort Yukon but we didn't see much of Fort Yukon because we were camped out most of the time. But our supply base was in Fort Yukon and this is a small Indian village maybe at that time, three or four hundred people and most of them were still living off the land, they trap, they hunted a few of them had summer jobs in construction but in Fairbanks or something like that but, but really they depended very much on subsistence living, catching fish in the Yukon river in fish wheels and hunting and trapping and some of them were very good at trapping. Now, much of that is gone. There are very little trapping anymore compared to what there was then.

Q What was the thing that made the Rampart project not go and was the information you gathered convincing or did it just die of it's own self or –

I think there were two major things, first the major environmental damage that it would cause, caused a lot of the environmental organizations to strongly oppose it but they really beat it on shear economics rather then wildlife values. It, it the evidence said that the environmental groups put forward on the economics of it was pretty convincing and so the project then died and I think projects like that don't tend to die and stay dead but I think every year puts a further nail in it's coffin though now with the energy crunch that we've got now they want to open the Artic wildlife range for oil exploration. I can envision them wanting to develop electrical power out of the Yukon, a renewed Rampart project with the problems they've got in California now and so it, you never quite feel those projects have gone away for good.

Q Bob Scott hiring for waterfowl?

Yeah, they, actually the, I got the fellowship to go to the University of Alaska for my masters but that didn't start until fall, but I came up in, in Spring, in May and then flew out, I first worked for a couple of weeks on the University campus to make ends meet and then in, in June I flew surveys over much of Alaska and into Canada with Bob Scott and then he dropped me off at Holy Cross and told me to pick up a boat and motors and so on there that they had stored there and I was on my own, hire an Eskimo to work for me and he said the people, it was a missionary town at Holy Cross and he told me that the, the missionaries there would tell me who would be good to work for me and when I talked to them there was one person left in town that needed a job and the missionary didn't think very much of him and I was stuck. It turned out that I probably got the best person in town. He was very aggressive for an Eskimo or Indian, that probably didn't go over big in town where there was, might have been liquor or something like that being in the field with me if I caught six ducks he had to catch seven and

so we had bang up summer. He was a first rate helper all the way and in those years we didn't have good maps so you really depended and I always enjoyed working with a local Indian or Eskimo that knew more about living in the wild then I did and could get along pretty well but the map I had then was cut out from an air navigation chart in which only the main stem river of Anoco was shown, Anoco and Ididerod and most of the map was printed in yellow labeled tarra incognita. They didn't know what the country was like even at that time and in, in the early 1950's they started the aerial mapping of Alaska, the Air Force started that in the early 50's and since then the maps have improved rapidly and continue to improve.

Q What were you doing that summer? What was the mission at hand?

It was pretty much a natural history project on waterfowl on the Anoco. How many were there but it focused more on banding and knowing where they went to then, then anything else. We were a little too late in the season to do much nest8ing work and not knowing the geography well enough anyway we couldn't set up any sampling system and I probably wasn't able to do it then anyway with the education I had at that time and, and so we banded birds with basically our only equipment was a dip net which we had to run down every bird individually and I think we banded a little over a thousand ducks and geese that summer.

Q Were there a lot of ducks there?

There were a lot of ducks there and a lot of geese using the edge of the river and the, the boat I had was so slow that if you were following the geese along the shore of the river, the geese could run faster then the boat could move but we had a very small skiff and we could take the motor off the bigger boat which was a 16 horse Johnson, an old fashion on, put it on the little boat which was fairly dangerous I would say and then we could catch up. It was a fun summer but it's

one of the two places I found more mosquitoes then any place I've been in Alaska.

Q What did you do after that summer?

Then I, of course after the summer I started work at the University of Alaska and my Master's thesis was on Pine Martin, a fur bearing animal and I, I always really wanted to work on mammals and ended up working on birds most of my career and then after I was of the longest temporary employees the Service had had, I think I got my, my ten year pin in career status the same year and it took two years to get career status, I had eight years of temporary time one way or another. But jumping from one project to another just where I was needed and while it was always a, you were always sort of low man on the totem pole as far as the pay was going, it was really the best part of my career and able to go and do everything all over the state on different projects and whether it was censusing moose or then my, I, one of the projects I was on was helping on the Allusion Island refuge on a study on sea otters and there were some professors from Purdue on the same project and that Christmas we became friendly and that Christmas I sent one of the Profs a Christmas card and on the card jotted that I was thinking of going back to school and that I was going to apply to Berkley and the University of British Columbia to see whether I could get into one of those. I knew the Profs from both those and I got an air mail letter back saying come to Purdue and we'll give you a scholarship so, I went to Purdue and I think I was probably lucky. I'm not sure I would have made the grade at Berkley or –

Q What did you study at Purdue?

I was still in wildlife management and my major project was on sea otters. I sort of topped my bet, I, when he told me that he'd give me a scholarship I said I'd come to Purdue if I could work on a project in Alaska and suggested sea otters

since the Prof there knew a little bit about sea otters at least and that worked out just fine.

Q Was there a problem with sea otters at the time?

Well, the sea otter population had, had become almost extinct about the turn of the century and we knew that there had been some recovery in some areas and during World War II a Navy pilot had censused just flown around Amchitka and identified a lot of sea otters there and, and so then the refuge became interested in and were contemplating transplant studies and so on to try to move them to other areas of population. Alaska wide was still very, very small then and, but so that was basically the way I got involved with that.

Q What was your work entailing locating colonies?

It was, I, I censused sea otters pretty well all through the laska where they were and then it was just general life history, reproduction and behavior and, and but I focused probably as much on anything as the, the history of the population. How they had been exploited by the Russians and subsequently by, by the Americans after the sale of Alaska and, and tried to make some estimate of how few there had become and I thought that in Alaska the population might have dipped as low as a couple of hundred animals and then when I was working on them, I worked on them for several years of course and my thesis I had data up to oh, '68 or '9 and I thought that by that time they had recovered to about 30,000 and, but they, they didn't cross between islands very rapidly. They'd build up the population and the bigger the population would get the deeper they'd have to forage to get food and eventually get to another, another island. The, once the population got that big though it expanded very, very rapidly. An interesting thing now, it's in the Allusions Island it's going down hill again and it's not all together certain what it is but it looks like it may be predation by, by Orca, killer whales that is, is having a major impact on them right now. There's been a very sharp

decline in the numbers of seal lions and seals in the north pacific so, so much so that sea lions are threatened or endangered and, and they were the primary food of the killer whale and the killer whale has had to substitute anything it could get and apparently it's getting sea otters. At any rate the population of sea otters is going down quite sharply in the western Allusions.

Q So, where did the sea otter study lead you? What was your next focus?

That lead, lead me to actually the, I was, before I even got my PHD, I went to work for the state as head of the predator investigation and control and then I worked for about three years for the state when I started the Rampart project and, and on that I had, that was a split assignment. I spent winters in Patuxent research center in Maryland and summers on the Yukon flats working for Hank Hanson at the time and so that, that was pretty good experience. Being at Patuxent for three years was very good and I've had breaks all the way through my career. Let's face it, interesting projects to work on and being the right person, the right place at the right time, like the Rampart project. I was only one that had done really much work on waterfowl on the ground in Alaska and so I was the natural one to go in on that.

Q Get him to tell Garvon stories.

He was a biologist working as a temporary for me on the, on the flats and –

Just Garvon would be enough. It was things happen to him and we were in a canoe one time and the water had been very high and the grass on the end of the lake was flooded and we were in two Indian made canoes, real narrow canoes and the, it, it was quite deep just a little ways off shore but he didn't realize that because there was grass in the water and so I, he was following me and I, I got the bow of my canoe on shore, stepped out into ankle deep water and he saw that I was in ankle deep water in the grass and so he was still in the

grass so he calmly put a leg over the canoe and tipped it over and he was in five feet of water and then one other time he, we had a plot that was sort of tough to do and so I sent him to do just about a third of the plot in the easy part and I didn't expect to be back until nine o'clock but I thought he'd be done by about four or five in the afternoon and I got back about nine o'clock at night and no Garven and it was obvious he hadn't been in camp and so I started out looking for him and finally it got too dark and I had to go back to camp and then I was up about three in the morning to track him down and I could track him to see where his canoe went in and out of water and I actually found him, he was on his way home, he had figured out where he was but he'd spent all night out and but he had lost his watch and had no idea of what time it was or anything else and on the last portage on to the home lake I was way ahead of him, being out all night he was tired and but I was crossing the portage and there was a patch of blueberries there and so I scooped a couple of handfuls and went on down the lake shore and he saw that and he came by them and he said these would be real good in pancakes. So, he wanted to stop and pick blueberries and I thought anybody that's been out all night wants to pick blueberries, I'll pick blueberries with him and so we had pancakes with blueberries that morning. But, then to cork it off, the next year I had a kid form Canada working for me, a wildlife student from Canada and he was on the same plot and if you couldn't find the lake you were heading for, you had them run compass courses through all these ponds and you'd start climbing trees when you got anywhere near but Larry was climbing a tree and coming down he found a watch in the tree and it was still running and so it was Garven's watch from the year before. I knew just who—but here's a tree 20 or 30 miles from the nearest village, way out in the wilderness someplace and it was really funny.

Q Was he a native?

Garven?

Q Yes.

No a white man. He had a degree in wildlife management. It was, he seemed to get in trouble all the time.

Q Were you working for the Service then?

I was working for the Fish and Wildlife Service, that was part of the Rampart project then, but that was sort of funny.

Q Did you work with Jim King?

I've worked with him but never for him. I've know him, he was a student at the University of Alaska when I was there and then when I was at, on the split assignment, Rampart and, and in Maryland he started as first manager of the Yukon delta refuge which was then Clarach Road refuge and then he was there just a year or two, a couple of years when he was offered Hank Hanson's job as flyway biologist for Alaska and then the Rampart project was winding down and Dave Spenser called me in Maryland and, and asked whether I wanted the Yukon delta job and I sure did because I was either going to have to, it would get me back to Alaska otherwise I was going to have to go full time in Maryland and that didn't really interest me that much.

Q You went to become manager?

And then I was at Bethel for eleven years.

Q As manager?

Yeah.

Q Describe what that was like, relationships with the native populations, how much support you had, was it just a caretaker kind of job?

The, it's when you think of refuges now and, and even what's on the Yukon Delta now, we had a staff of four, a maintenance man, a secretary, an assistant manager and myself and the refuge at that time was about six and a half acres and so we had our hands full but, and our budget was so small it was in the seventy thousand range that the first day of the fiscal year we could have a fixed cost for our airplane, for fuel, electricity, light and salaries and we were in the hole, on the first day of the fiscal year and yet we ran a pretty good project out there because I wrote Profs all around the country and, and told them that we had, we couldn't afford temporary helper for the most part but that if they had students to come out there that we would, we would furnish them the logistics since our airplane was paid for and we had boats and, and that worked out really superbly a Prof from Purdue sent some students out and Dennis Ravling from University of California sent students out and we had a student from Canada and so there were several masters and PHD projects that went on when I was there and so we ended up with a really good program, really I had no wish to leave Bethel really but the last three years I was there I was on constant detail doing other things, other then the refuge so that the refuge program was sort of going to pot from my point of view because a fourth of the staff was gone, that was me and I was the one, the only one interested really in research but I had been the detailed on the Alaska natural interest lands legislation and I was pretty much involved in that for, for three years and I, I averaged about two hundred and ninety days away from home, so trying to live in Bethel and, and doing the other things is just almost impossible so in the, that was finished I,

(Tape change)

Q What politics were involved? How the refuges and the lands were divided up. What the process, a little bit of history of how that all came about.

The, the national interest lands in Elka I think probably had a longer history then most people think, from my point of view at any rate but a lot of the environmental organizations long before Elka got interested in the artic wildlife range and, and as sort cause celebra, and, and so they had, had a large coalition of environmental organizations that fought for that and then at the time that the Native claim the settlement act sometime later the artic range was originally established by Ydal who had, had blocked oil development up there until the range was established, she set everything up as a monument and, and they couldn't really move forward with the oil development until some of the environmental issues were settled and in this group of organizations was still together and so they were interested in preserving more land as refuges and parks in Alaska. At the same time we had John Dingle who is very interested in refuges as a whole and was interested in, in lands in Alaska as a refuge and he requested the Service identify lands in Alaska that, that would be good as refuges and that's the point I really came in directly. Jim Keagan and I were mostly because we were the only ones free and could go probably and we also had, he had flown more over Alaska and seen waterfowl and I had worked on the ground in several locations. We're sent to Washington, DC to identify refuge lands, land suitable for refuge in Alaska but we had absolutely no idea how, what we were going to ask for, whether it was ten thousand acre, a hundred thousand acres, a million acres. We had no framework, nobody in Fish and Wildlife Service who could tell us what we were supposed to be doing but we started on a series of briefings on what we were going to do, it was, everything in the cart was before the horse and it was sort of funny and then John Dingle learned we were in town to respond to his question and asked us up to come up and brief him and during the briefing, Jim King asked Dingle, pointed out to Dingle, we had no frame of reference. We didn't know what we were supposed to be identifying, whether ten thousand or a million acres and, and Dingle came right back, he said I want you to identify everything in Alaska that you'd think would be good for a refuge and we both pointed out that was very easy to do if, if you had ten

thousand acres to select, you'd probably take a seabird island but if you could grab everything and we were on the floor with a map of Alaska with John Dingle and, and we're on the floor drawing, lines around all the places in Alaska that we thought would make good wildlife refuges and then that went into the native claims act but not just as refuges, it was parks, refuges and everything else and the native claims act director the secretary to select up to 80 million acres of, of lands in Alaska that would be suitable for national parks or monuments or, and split it up among the four systems BLM, Butmars preservation recreational areas and I was involved in selecting then of lands and, and preparing impact statements, environmental statements for, for the lands we selected and initially the legislation went in dividing the land fairly evenly between BLM Parks Service, Forest Service and Fish and Wild life Service and I 've often thought that Don Young should get a metal for his conservation effort, he was very much opposed to the refuge in this legislation and so when, when the Secretary of the Interior went in for 83 million acres instead of 80 million acres he was most upset and he put in another bill for 16 and said it be comprised someplace in between and then the environmental organizations, much the same ones that had pushed for the Artic wildlife range said, no it will be a compromise between anything we might want in your 16 million and they got everything they wanted. They got about 130 million acres into the refuge and parks systems and BLM was pretty well cut out and the forest was pretty well cut out. The original legislation I think, asked 23 million acres of refuges and we ended up with 52 million acres and it was just a fantastic thing to be --

Q Talk about women and biology and field work.

The, there were very few in the early days. People went into wildlife management because they like hunting or fishing and, and there were just almost no women involved and if they were involved it was usually through a University system like the University of Alaska had a first rate ornithologist Brina Kessel that was employed but in must have been 1967 or 1968 one of the Profs wanted to

send up a girl onto the refuge and, highly recommended her so I and another Prof also wanted to bring up a girl a, a student that they'd started in wildlife and I was perfectly happy with that and, and so they came out on the Yukon Delta and then our regional office, we were under Portland at the time rather then the Alaska Regional office, were so fascinated by it that they wanted a news release of these girls working in a remote areas of Alaska, on a refuge and I sent them the information and some pictures and it hit AP and it was all over the country. It was just an unheard of thing as late as the late 1960's that you'd have a women working in a remote area in a field camp. It seems strange now but it was sort of funny because that fall I was on my way to a meeting in Florida on a plane and I was sitting with a nice looking lady and she, we started talking and I told her I was from Alaska and she asked whether I had heard about this women working in the boonies of Alaska for Fish and Wildlife Service and I said yes, they work for me. I wouldn't have dared tell her that but in my brief case I had two sheets of slides I could haul out to show them to her and, but then shortly after that there was really strong government involvement in equal opportunity which extended to women as well as racial groups and when, then when I started the, the marine bird shop in Anchorage there were, almost nobody with any experience and so I, I hired a lot of women in that job and some of them are still working. In fact, all of them are, that I hired are, are in the field yet and some of them in Alaska, yet but, the we had a really nice person as a EEO officer at the time but she heard me make some derogatory comment about EEO, that I didn't, didn't like the program and, and of course she hadn't heard, over heard the whole conversation, she just heard that much and so as a project leader that she didn't think was supporting her Eeo program, she, she complained to the Regional Director and the Regional Director told her to talk to the Assistant Regional Director who is, and, and then called me and said sooner or later she'd be down there to see me but the Assistant Regional Director then directed her to my boss and my boss finally sent her to me and then she walked in the room and I had this trophy on the wall that I got from my contribution award that I got from my contribution to EEO for hiring so many women and minorities and, and she told me what she'd overheard and I

said yes, I don't like the program I said all you do is hire the best people you can get and let the chips fall where they may and they might be minorities or women and that's what I had done basically and about half, better then half my staff at that time was women and all of them working in the field and --

Q Talk about Hank Hansen? Saving the Spring Water puddle survey with Hank Hansen.

Not quite sure the, Hank Hansen was continuing surveys after, after Bob Scott had started them actually Dave Spenser had flown the earliest one and he was followed by Bob Scott but because Spenser was actually part of the refuge supervisor at the time and wasn't, but he had been a flyway biologist before he came up here so he at least started some surveys in Alaska and then Bob Scott set up surveys over most of the important waterfowl areas in the state and then he left and, and Hank Hansen took over and he was initially flying the same survey lines as, as Scott had set up and, and, and I was working for Hank mostly on the ground and doing some air ground work and so on and but, we realized that the surveys weren't a very statistically sound sampling system that, that a small area might have as many transect lines and be sampled as heavily as a big area and it didn't all make sense so in 1956 I think it was or before, before the surveys were flown in 1956, Hank and I laid out all the transect lines that they're using now and then Hank flew those for years and years and at that time he was flying a piper pacer and on floats and which meant that you had to have gas on lakes in any place you went and it had limited range compared to what they've got now. It was a huge, huge job to--

Q Was the Piper an under wing plane?

No it was, the Piper they had then, the Piper Pacer was a high wing. It's, it's I was going to say something like it's got a bigger fuselage, it's actually a four placed plane but it's smaller wing spread and so on then a cubby did so it's sort

of a hot little airplane but it didn't perform to well on water and, and it didn't have range or so on. It just wasn't a very good airplane. The first really good airplane for survey work we had was a 180 and that was, that was a fine airplane and then from that we went to 185 and now to 206 now the turbo beaver which is probably the best thing that ever happened to the surveys up here.

Q There's only one though.

There's only one. It's too bad we don't have a dozen of them.

Q We just did a video on trying to get a new era of, a new airplane specifically designed for survey work.

They aught to start out with a beaver and go from there. The, the 206 is, is on amphibious floats, the 206 from my point of view is a dog, When I talked to them in place they land and so on I would, they just can't begin to get in and out of the places we did with straight floats and yet nowadays to get fuel and so on you almost have to be able to land on land and so there, there in a sense good survey airplanes, the best available now but there is nothing really great.

Q His work for research under Dirk Durkson. Only smoking office they tolerated because of Cal's pipe.

I had an office of my own though with windows but I smoked for years and years and years I guess and I got the message all of the sudden, better quit. I had a stroke in 1993, I think, that was after I retired though. I kept--

Q Dirk Durkson?

Durkson replace me, I was head of research and then I, have you ever read the Peter Prince book and you know what percussive sublimation is? So, I was

bounced up to where I couldn't do any damage and Dirk took over my job, so I ended up working for Dirk, that worked out fine but it but I continued to smoke my pipe. I, I it was almost part of me. I'd wake up in the middle of the night and reach for my pipe.

It's still funny even yet I, I'm usually wearing a dog whistle and once in a while you know, when you're nervous or something like that I'll have the whistle in my mouth and reach into my pocket for a cigarette lighter.

Q How long was your career? When did you retire?

I retired in 1988 actually and but then kept my office in the Fish and Wildlife Service for several years longer. I think in 1989 I put in a full years time working for Fish and Wildlife service as a volunteer because for the Exxon Valdez spill I ran all the morgues and then did a lot of right up on the, on the dead sea otters and birds and then --

(end of side one)

--In a profession that you really like, you just, you might retire but that means you quit getting paid and but--

Q Looking at the future of maybe, let's keep it to waterfowl, how do you, where do you see the Service pretty much expanding in some areas, do you see them expanding in some areas? What do you see in the evolution of the Fish and Wildlife Service?

There's been a lot of evolution of the Fish and Wildlife Service even in the time I worked and that's mostly due to legislation like when I started you had a office of river base and surveys but you didn't have too much authority but you did good work, now that's evolved into environmental statements and, and commenting on

those and, and any Corp or Engineer project has to take Fish and Wildlife, there are just lots of involvement, different involvement, on different kinds of environmental matters. The endangered species for instance none of which was there when I first started working.

Q Let's go back to endangered species and the changes you saw in that and, and how the mission of the Fish and Wildlife Service has been changed in certain aspects because of (inaudible).

So, so the mission of the Fish and Wildlife Service has spread out so much since, since the early days because of new add ons and so on that has created I think, a certain problem because the, the refuge division for instance is probably always been under funded as compared to the Park Service it, it's played second fiddle, we have more land, we do more with it then the Park Service does, you can hunt and fish on our land or I can't help but saying our when I mean Fish and Wildlife, our, I'll always work for Fish and Wildlife Service I guess but at any rate, refuges have been under funded and been a problem, that's been a problem but we've got refuges in every state now and, and so there's some resentment in the refuge division against that lack of funding and feeling the Fish and Wildlife Service the whole is draining funds from the refuges. I really don't accept that thing, I think on early days at least it was partly the Systems fault and it's going to take time to change but 20 years ago or 30 years ago refuge managers really wanted a refuge to sort of lock it up and throw away the key and not let anybody on them and it's only in the last couple of decades that they've realized that visitor centers and public education and involvement of the public is important and, and so that we're getting more and more public support but, but it'll take time and I, I, it will probably never approach the monetary status of the parks so we can't do as much and I think that's probably not all bad. I don't think we should have as much money as the Parks Service have because that would mean we were getting too many visitors.

Q Did you have, was that a conflict, how was all that resolved between traditional native uses and, and the Migratory Bird Act and those things?

Legally the natives have never been able to take waterfowl, they did, so basically if an, a native shot a duck in spring, he was violating the law and when, when you've lived off dry fish all winter and, and haven't had much else a goose in spring tastes pretty good so there was pretty good justification for, for amending the Migratory Bird Treaty to permit hunting in spring but the, it came out you know you can't let a particular ethnic group hunt so it's done more on the basis of the size of your community for and so on, and, and I think it's going to, could create problems down the line but where do you, where do you saw it off and how, how firm a regulation you can have. If they regulate the take in spring very carefully it's fine but as a population in some of the remote areas increases it could cause a problem so I'd like to, to, to see regulations pretty well enforced for my own point of view. On the other hand this is a, a problem for the Fish and Wildlife Service because when you've got very, very powerful Senators such as Senator Stevens you don't want, and he's completely in support of the native positions, that's where a lot of votes come from and it is for other Senators and Representatives too, you're not going to do too much to bucky them and so there probably hasn't been as much enforcement of laws against natives as might be other wise possible. Looking back clear at the history of that--

Q When you were a refuge manager would you look the other way or were you looking for violations or was your territory--

Basically, I, I told the natives I wasn't going to go out enforcing laws or try to find them but if they shot a duck in front of me they better watch out and I never paid, and basically they didn't, they, they they knew I sympathized with them to a very large extent but when I was out there, their equipment was much inferior to now. Now, they've got a fast boat with a 65 or 115 horsepower motor and they, they can hunt three watersheds over from where they were and even when I was

there you could see the rivers they lived in and the next river there would be any geese on the river any more and then the further you got from a village there're more geese and, and so that clearly subsistence hunting in spring had an impact on waterfowl and then I think the Fish and Wildlife Service missed a bet, they didn't recognize the amount of waterfowl that the natives were taking and so seasons in California were set sort ignoring the native take and that, and then we had some years of severe predation on the Delta, nesting predation and a combination of those various things sent the goose population on the Yukon Delta into a tailspin and the populations ended up less then a fourth of what they were. I think Capplers we were concerned that it might have to be put on the endangered list though, it fell short of that but,--

Q List some of your career, what your sense of feeling and accomplishment, what are the highlights?

It was all sort of a highlight from my point of view. It was just, every job I had I enjoyed. I think probably the least fun but the most important in that, that sense of highlight was the National Interest Lands Act, the work I did for that but both for, for just pure enjoyment and, and also accomplishing something the waterfowl studies on Rampart and, and the initial studies on the Yukon Delta, the large number of students that were able to pursue their careers when I was out there were, were very good and then starting the marine bird program and, and a really good program. All of those things are, I, I sort of walked from one highlight to another. So, I had a much better career I think then most people ever get an opportunity to have.

Hank Hansen

Well, my real name is Henry Hansen but I don't answer to that I answer only to Hank and I have for many years.

Q What was your education?

I grew up in Des Moines, Iowa and I left right after I graduated from high school I went to college in Nebraska, a little college in York, Nebraska that went to defunct at the beginning or shortly after the beginning of World War II, just weren't enough students to keep the thing operating I guess. I got my Bachelor's Degree there and immediately went into the Service in fact, I was inducted before I graduated and they, they deferred me until I got my degree because I was pre-med and in those early days just before the war pre-meds and engineering majors were all, they were—they, they let us, they let us finish our degree before, but we understood that as soon as we got our degree no matter what we were majoring in we were going to be inducted which I was. As a matter of fact, I take some measure of pride in you may or may not remember, how that first, that first induction was made. Franklin Roosevelt was President and his Chief Of the Military, whatever it was called then, General Hershey and the first draftees, General Hershey reached into a big fish bowl and brought out a handful of slips of paper with names on, my name was in the first, the first handful of –

(airplane noise)

Well, he reached into that fishbowl and pulled out a handful of names and mine was in that first handful. I was among the very first inductees but I was, as I say, they let me alone until I graduated but as soon as I graduated I, I went in and I was inducted into, into the ground troops into the field artillery and I could, I couldn't see my life flashing before my eyes out there pounding the turf so I

enlisted in the Air Corp in the Army Air Corp and was accepted and that's where I, well I still had to go through basic training in the ground troops but after 14 weeks of that they released me and I went into the Air Corp before Pearl Harbor, that was, this was early, early on and I went through flight school in Arkansas and then I knocked around in many, many training units in the state side before I eventually ended up in a fighter reconnaissance outfit in Europe and did all of my oversees time flying P51's in England and France and Germany and when I came home I still had, I still had my intent to go back to med school, I had a scholarship to the University of Nebraska, school of medicine and but I found out in the meanwhile that there'd been a new science developed and it was called wildlife management and that's what I really wanted. The only, the only real reason I found out that I wanted to go to med school was to make enough money that I could hunt and fish all I wanted and when I found out here was a science that had been developed that I could get into and it revolved around fish and wildlife, game of all kind I immediately transferred to one of the very first wildlife schools and that was Iowa State University and I got my Master's Degree at Iowa State and came out to Washington State at Pullman to get my PHD and then took a job with the Washington State Game Department and I worked for them seven, eight years before I had an opportunity to go to Alaska 19, well, I had a chance to go to Alaska early but I had accepted a, a teaching job with Washington State and Clarence Road came through and was taking an airplane up to, to Alaska and he contacted me or vise versa and he wanted me to go up to Alaska, he offered me a job and that was in 1947 and he offered me a job on the spot to fly up with him. Well, I had just accepted a one semester teaching job at Washington State and I didn't feel it was right to accept the job and then immediately walk away and leave them with nobody to teach their wildlife courses. So, I, I regretfully turned Clarence down at that time and then I went to work for the state of Alaska, Department of Game--

Q State of Washington.

Or state of Washington, Department of Game and I worked for them until, until the spring of 1947, early '47 and a job became available in Alaska, a flying job, flyway biologist job and it was the first one up there and I decided I just couldn't pass it up again so, I left, I left the state of Washington and I went, I went to Alaska and started flying that spring.

Q How was it in Alaska and the knowledge of waterfowl and management and had there been any work done before or what was the science at that point?

Well, there had been a few cursory waterfowl surveys. Dave Spenser had done a little surveying out on the Yukon Delta and Bob Scott had flown a survey for a spring or two but they were, they were not very coherent, they were just kind of exploratory and they and there was no attempt to really put things together and make a, a program and, and determine what was up there, where it was, how to go about making a good coherent survey comparable of what they were all ready doing in the Canadian prairies and that was, that was my first shore was to locate the waterfowl habitat, map the waterfowl habitat, determine how to go about setting up the surveys so that I could do, I could replicate them year after year and make sense out of what was there and we found out from the outset that there was not way that we could compare the Alaska habitat and waterfowl with what they were doing down in the Canadian prairies. It was, it was not adding apples and oranges, it was even more diverse then that. So, I went ahead and set up some surveys that were unique to Alaska, completely different and separate from what they were doing state side in Canada, something that we could replicate year after year and, and make some kind of sense out of it for that part of the world up there and from the first exploratory surveys in the summer of '47 to determine where the waterfowl were, what species were there, what their habitat was like and starting with that in 1958, 1948, 1948, no it would have been '58, my mind, my mind slips me.

Q Ten years later?

Yeah.

Q '58.

'58, 1958 I set up the standardized transects surveys that, that Bruce and his crew are still doing today. They're following, for the most part, they are following the identical routes that I set up in 1958 and there have, from my understanding, very, very little changes. The only changes have been in, in the observers, the crews that have been making the (inaudible). But the, but they're following precisely in my tracks from 1958 and the results are comparable from year to year and it's, --

Q What was flying like in those early days?

Hairy. We had, we really did have some rather primitive equipment for flying in that bush country. I started out with the Piper Pacers and the Pacer was a good little airplane on and off of airports with facilities designed for it but to be out in the bush country where, the, the facilities weren't there, the refueling wasn't dependable. It was, it was touch and go much of the time but --

Q Did you fly on floats or tundra tires or --

Flying on, on floats for the most part. We did get floats for the airplanes because there were no air, there were no landing strips, there were no airports or landing strips then, very, very few and it was on floats off out there in the tundra country or nothing and I always was glad that it wasn't nothing.

Q What kind of navigational aids, maps etcetera were available?

Well, now that was even more primitive. In the area around Anchorage, Fairbanks and the inner part of the, what was then the territory, it wasn't a state then, it was just a territory, the maps were pretty fair but I found out as I got farther out, way up in the northwest, certainly north of Brookes range there was nothing for maps and you'd have a big chart and you'd be flying along and then there would just be a great big blank spot, there was nothing there, nothing there had been charted there and even down around, as far down as Cottsabew and Knome the, in that area, they had lines on the charts but I soon discovered they were not accurate. I couldn't depend on them, I, I had to pretty well develop my own, my own schedule, my own area and for a few years until the USGS did get in there and get it straightened out but the first two or three years I had maps that were, were totally inaccurate or nothing on them.

Q Jim was saying, well, you know, the rivers run to the sea and you just fly between the mountain ridges and follow a river down and that's--

Yeah, that's the way it was but then the problem was to replicate that the next year. I found that it was difficult to follow the same transect lines from year to year without a map to put them on a map and follow them because the, the ground didn't change but my recollection of what was on the ground up here changed somewhat but eventually it worked out and in two or three years we had the maps and we had everything really well standardized and, and that's what they're using now and of course since then, eventually you mentioned for aircraft we got, I flew the Piper Pacer for the first several years and then we got, we got the Cessna, the Cessna was such a big step up that it was unbelievable and then they eventually, we went from the, we did have in addition to the Piper Pacer we had oh, the other little float plane, I don't recall it now, it slips my mind. At any rate, and it was also on floats but our next step up of course was when we got the --

Q Gremlin Goose?

Well, we had Gremlins all the time but I wasn't using those on the surveys, I didn't use the well, ask me to recall names, they are in and out of my head-- I had a stroke a couple of months ago and it, and it left my mind totally blank at times but it was we did get some good single engine aircraft and then after I left Alaska I was up there eight, nine years and --

Q Were you flying all the time?

Oh, yes, oh yes. And--

Q Were they primarily waterfowl surveys or, one of the things that I remember reading about in what you had written is that, that you not only looked and noted waterfowl but also moose and other critters, talk about that.

Oh, well yeah from the, from the outset I, waterfowl, that was my primary purpose, my primary responsibility but I decided that since I was up there using government gas and government aircraft and government time and there were long stretches down these transects that I, I didn't see a whole lot of waterfowl in some areas so I decided that there was nobody else keeping track in a systematic manner of the other critters that I, and I had, I did acquire, a talking machine, what do you call them?

Q A Dictaphone.

Well, I had the first Dictaphone up there and so I could record anything I saw, it was just a matter of carrying enough, and in those days it was plastic belts on a Dictaphone and as long as I carried enough plastic belts and could get them changes I could bring back a basket full of them and that was kind of a primitive machine but it worked and it worked well. So, these transects on either side of the aircraft I decided that I would count every thing in there and systematize it so

that I could expand from that transect out everywhere until I get into waterfowl and I counted ptarmigan, of course all of the mammals that, there weren't many but moose, caribou, bear, brown and grizzly bear, black bear and ptarmigan, when I was in ptarmigan I did make a good count of ptarmigan over the years and I could, and that's one thing I did, I documented the rise and fall of ptarmigan cycles. You know, we'd heard ptarmigan are, they come and go in cycles, highs and lows and it was just kind of a guesstimate, nobody had really done much to, so I went though and on my waterfowl transects, I went through a few areas of really good ptarmigan country and I documented the rise and fall of ptarmigan populations. They would rise very slowly to a peak and I'd find, I'd find just a tremendous number of ptarmigan and the next year I go to the same transects there were none, it was that crash that they talked about. I couldn't determine what cause the crash but, but I documented the populations that that had happened and I went through, I was fortunate enough to be up there long enough to go through two, two cycles, two ptarmigan cycles and, and all other species of wildlife that were on my transects and --

Q Talk a little bit about the contribution that waterfowl make to the continental, to the state's populations, you know? I guess a lot of people didn't realize how much --

Early on they were written off, Alaska, that's just off up there, it's ice and snow and that's one reason that, that's one reason that they didn't send a survey crew up there at the same time they started down south in the prairies because it was just, it's just up there, ice and snow up there and somebody got the idea, well, when the first federal aid biologist went up there, shortly after the war they, and they were working on everything else but their biologist just said, well there is a lot of waterfowl up here in the summertime, somebody better be doing something about that, they're counting them down south, we aught to see what's up here and that's when they decided to set up a program up there and hired me to go up. It turns out that Alaska contributes a significant number of waterfowl to the

continental total and particularly geese of all species and, and our two species of swan. Alaska is a tremendous producer of geese, ducks, geese and swan and another thing that we discovered, they were way up here in the northwest corner of the continent, well then we, we knew that they were there then where do they go? Where do they contribute to the continental harvest population? So, that's when then, starting my very first full summer up there I set up a banding program. They had been doing a little goose banding in the, in the years before I got there not much but a little goose banding. But I set up a, a comprehensive banding program to determine where the various species went and where they were harvested and in what numbers and we discovered that Alaska contributed some species mostly, largely to the Pacific flyway down (inaudible) but some of them, they went east and they went clear over to the Atlantic, Canvasback and Scop and some of the diving ducks went, they went clear across the continent eastward. Trumpeter swan when we eventually, that's another, that was another discovery, trumpeter swan we discovered, they at that time the trumpeter swan was listed as an endangered species and they had at one time only 28 trumpeter swan nesting down in Red Rock Lakes area and then by the time I had come up here, the trumpeter swan had gotten up to a hundred and a few, it was still very endangered and down in the Copper river country and in the mouth of the, down around, in that area we discovered swan down there and we had assumed, we had known there were a few swan in there all that time but we assumed they were whistling swan, we knew that there were a lot of whistling swan up here but we got one or got an egg, got a young swan, anyway it was dead and we had the taxidermist or we had people take a look at it and, and I, I measured the eggs and the eggs of these swan were substantially larger then trumpeter, or then whistling swan eggs and then we got a hold of a couple, three adults and banded them, measured and weighed them and we knew then that we had trumpeter swan up here and the trumpeter swan we had a few down in the, down in the Copper river delta and they started spreading, for whatever reason, I don't know well, we had, we had a good theory and I think the theory turned out to be right. But when they quit spring trapping, when the, when the natives quit spring

trapping in those area the swans started to expand in numbers and what happened in the spring in the air when those swan would come up from the south, the natives were out there trapping muskrats, trapping, shooting, at that time they were shooting them with 22's and they were, as these swan came in they'd shoot them and they were killing them off for spring food.

(tape change)

Q Describe the native with their cultural customary practices.

Yeah, we'll the natives, the natives took waterfowl because they had been without fresh meat all winter and, and I saw it in all areas of the state and in all conditions and I'll have to admit that, that in the spring of the air, in many native villages those people were hurting for food. It was, it wasn't a good situation but once for whatever reason, they quit spring trapping and shooting muskrats, they weren't out in these area where the swans returned, the trumpeter swan habitat and that's another story in itself, the difference between the two but the swans, the trumpeter swans started to come back and they not only multiplied in that core area down in the Copper river delta but as they got more birds there and population pressures, they started to spread up and now they are all through interior Alaska and over into Canada and the trumpeter swan is, is now just doing fabulously but it is now not only protected by law but in fact, in the spring of the year. So, that was, that was another thing that, that happened on my watch up there was being able to document the return of the trumpeter swan and, and it's spread throughout that, it's territory but that was one of the other things, being a swan that we've been able to determine and it's the, not only the species difference between trumpeter and whistling swan but their range, the well, it's now the whistling swan I, can't keep up with their taxonomic changes, they now call it the Tundra swan. The difference between the, besides size but it was their area. The tundra swan so called now because that's where it nested, on the tundra and the trumpeter swan nests on the interior of Alaska so in the, in the—

Q The trumpeter nesting in the interior?

The trumpeter nests in the tundra—

Q We're talking about the interior swan.

The, the trumpeter nests in the interior part of the country and where, when they go as far out as till they get to the tundra area and then there is a rather specific line between the two. They over lap a little to some extent but not very, very much and then out on the coast, all the way around across the artic and into Canada, coastal Canada, it's the, it's the whistling or tundra swan and that was another thing we had to determine the delineation between the two which we have long since done and so that when Jim King and Bruce, later in the summer when the, when the waterfowl surveys are done and they go back up, and they go back up into the Prouto Bay on the artic slope then they're working with tundra swan, the old whistling, tundra swan up there and –

Q Talk about the subsistence hunting and egging and the conflict with law enforcement and legal and cultural practices and how somehow you made all that work.

Well, that was, that was one of the things that I perceived early on when I came up here. In fact my first, my first winter and spring trips out among the Eskimo and Indian villages was how pitifully poor and starving and hungry they were and they couldn't hunt waterfowl and the first thing that came in the spring of the year were great flocks of waterfowl and they went out to get it because they needed them for food and they were still taking eggs in great abundance and there was a, there was an article, a clause in the international treaty, waterfowl treaty, written in from the outset whereby the Canadian natives in the artic could take waterfowl in the spring of the year by law, it was legal. Our natives that were just

as starving or more so could not because it was an over sight that the founders of the treaty had written in there inadvertently or otherwise, I don't know but law enforcement people were bound and determined they had to enforce that clause in the law which they were and I thought we aught to be able to do something about that. We aught to at least make the treaty consistent between the, the Canadian natives and our natives up there in some manner, give them a break and when I, then after I'd been up here 8, 7, 8 years and went back to Washington and took a job back there one of the first things, one of the first challenges I had was to try to make sense out of this and our, one of our former, name's gone, very good friend of mine, but anyway he was kind of put on the shelf over here but given the, given the assignment of trying to do something with that treaty and so with my experience in Alaska and his experience with the treaty and the regs in Washington for may, many, many years we got together and we tried to do something to set the, to straighten that out and we, we did put together what seemed to us to be a clear and logical package as to what could be done but somehow or another we still couldn't get people to buy it from, from the US standpoint and I understand in the last two or three years, I haven't been involved in it but I have heard that they finally have started to get that untangled and they have made some provision for the natives to hunt in the spring of the year up here. Some, either in some areas or some species or as long as they don't take eggs, that's one thing that they haven't and that I never could agree with going out you can wipe a species out in a hurry if you wipe out all of their eggs. So, that was another, another thing I got involved and worked on for years off, in addition to other duties that was one of them.

Q Talk about the King Ider instance, at one point I understand an agent was sent up to point barrel and you know, that's a good story.

Well, he, the natives out of Point Barrel and on around on the north, far north coast in the spring of the year they hunted Ider, that was about the only thing that was up there. They hunted Ider, that was the only place Iders were hunted and

that was one of them, one of the species I decided that we aught to relent and let them take them, they needed the food, the birds were there, they weren't taking them in enough numbers to do any harm to the population, to the species and our chief of enforcement, to make a point or to become big dog on the block or what ever he wanted to do, he sent an enforcement agent up to Point Barrel to make some spring arrests and so this guy did but here everybody's shoot Iders up there and what was he going to do with them if he, if he arrested everybody that was shooting an Ider and confiscated all the birds, here he'd have a truck load of Iders, what was he going to do with at Barrel so he arrested one native, with one Ider or rather one native brought one Ider into him at Point Barrel and gave it to him and in effect says arrest me and at that time all the rest of them came in with these, what must have been hundreds of these big Iders. Well, this poor agent, what was he going to do? If he arrested all of the Eskimos on the north coast that had birds he'd have thousands of Iders and hundreds of natives and what could one agent do with all of that? So, he got on the radio or the phone or whatever communications there were in those days and called the people down here and, and I don't know I think they just recalled him, left it as it was and brought him, brought him back home but it did make the news. The natives were astute enough to know that, that if they had somebody there reporting that and getting pictures of it that it would be a total embarrassment to the Service and, and that's what happened in that incident, that was the, that was the Ider incident at Barrel.

Q Talk a little bit about the Rampart project.

Oh, well, that was another one that, then Senator, he had been, he had been the big wheel politically in Alaska, pre-statehood and he was one of the main driving forces in getting statehood for Alaska, it was Ernest Greening and he had gone back to, he'd gone back to Washington as one of our state senators and was a very powerful man from our state political stand point, on the, on the national scene he wasn't because Alaska wasn't recognized as much of a power house

but he was a powerful man and to consolidate his standing and his power he wanted a great big hydro-electric project up here and what could be the biggest and grandest hydro project on the face of the earth certainly north America would be the dam, the river and make a mammoth hydro project up on the Yukon flats and he was pushing for that and he was getting lots of enthusiasm going for that and that would have devastated one of our, well, one of our two major waterfowl projects, breeding habitat projects and that would have been the Yukon flats. His proposal was to dam the Yukon river at Rampart where the Yukon narrows down in, into a huge, rampart canyon and make a tremendous hydro project there and his idea was that he'd get that much power, it would make Alaska one of the leading production areas for all the natural resources we've got, mining and everything else up here and we decided, I was in, still up here in charge of the waterfowl program and it was statehood and everybody else had been transferred down south, Fish and Wildlife Service had been dismembered up here and the state took over all resident species. It set up it own, it's game department and its own biologists and administrators and it's whole works which is, was right, as it should have been but the Fish and Wildlife Service was still responsible for migratory birds and I was retained up here after all the, everything had been dismembered and our staff had gone, been sent off south somewhere except for a very few, three or four enforcement men to enforce Federal law and I was up here for waterfowl and we were essentially the Federal staff up here and . . .

(change to side B)

. . .had to get our facts together that we could not defeat this just with flowery words off out here because who's going to debate with, with Ernest Greening, he could out debate anyone in the Senate and everyone was aware of that but we could only do it with, with facts so we'd been banding in the interior of Alaska for years ever since I came up here but I intensified the banding program up in the Yukon flats area on the river, hired summer employees mostly collage students

and we did a lot of banding, massive banding up there, waterfowl of all species. To show along with the aerial surveys that I'd been doing for years to show what species were up there and how many of each species and where they migrated and where they were hunted so that we could get support across the continent, down south for the people that were benefiting from these birds. We couldn't do it up here because there was nobody up here benefiting from those birds, as soon as they were hatched and on the wing, they disappeared and we went into this massive effort and that's how we showed that those birds up in the interior spread across the continent, they benefited everybody and then we, we got the people down there through the flyway councils to get on the bandwagon and in the meanwhile somebody got on top of the situation and decided that really for all of the more then millions at that time it was unheard of billions of dollars to put this project together, it not only would destroy fantastic natural resources up here but there really wasn't enough industry up here and they couldn't ship, at that time they couldn't move the power out of Alaska, they didn't have the technology and they would have to use it up in interior Alaska and there just wasn't anything they could use it on to make it pay out and, and that project then just kind of expired, died of it's own weight and if we hadn't of, but I have to think that the Greening and his cohorts would have had the power to put this together and push it though if we hadn't have just had enough information in this whole waterfowl resource area with nation wide support to save all this resource, I think that was what eventually really put a nail in it's coffin and, and I'm, I am proud of that project.

Q Well, what is even more important I think is the data that was collected there and in other places over your tenor and before was instrumental in, in setting out where the wildlife refuges were going to be on the Alaska settlement--

Yeah, because our refuges are, well, we've got a few for other species of course, the moose on Mekeeneye and the bear on the Kodiak okay but primarily all these great big refuge areas that we set up with, what with the statehood project were

for waterfowl and waterfowl habitat and it, it was the waterfowl project of course that delineated these areas and outlined them so we could draw them on a map and, and the people could then determine what should go where and for what purpose, yes, that's true the waterfowl project did that.

Q Cal Lensink talked about being, coming to Washington and making lines on a map and it was based on, on data that you all had acquired.

Well, that was the map that I was looking for in here, that you could, that we could refer to and boy it's gone, it's in there, in that jumble of stuff on my desk I don't know, but no, you, so you may have already seen this map if Cal showed it to you back there because he's got one, it's called a series E map. It's a, it's about, about like so, that size and it's just Alaska and it shows, it's a relief map that shows all of the, everything and that was our basic map that we used and that was the basic map he was talking about, we drew lines around all of these areas and at first to be sure we had everything covered we'd draw great big, but then as I put together waterfowl information then we could, we could go around and draw them in much tighter so that they are, they now cover an area without just a big blotch on the map and that's, that's what we used was that basic waterfowl information.

Q If you look at how many millions of acres were conserved by that, I mean that's a legacy, It's incredible how much land was set aside against the wishes, I guess of some of the current representatives but--

Oh, they would still like to dismember that. We got, oh we've got people that would like to come in and, and destroy that even today except for a few core areas but, but they would, if, if they didn't have those preserved that way then they could use them for other purposes or they could destroy them for other purposes, yeah, so, yeah that turned out to be a pretty good stroke and they, you look back over your career and I'm 83 years old, mine goes back a long ways as

does my contemporaries that were up here then, we talk about others like Dave Spenser, he's ten years older then I am and, and others, all World War II veterans, you know that goes back a long ways.

Q Talk a little bit about how the pilots who came out of World War II were really the core of the flyway biologists you know, right after the war, how that transpired.

Well, before that there was no flyway surveys or flyway biology, was all done on the ground with canoes, just following river course and the lakes they could get to and walk around by canoe and on foot, because the aircraft wasn't technology that had been developed that they had. So, at the end of World War II here was this tremendous bunch of pilots that came out, a few of which had been trained in biology, the biological sciences and just tiny, few of those that had this new science wildlife biology so they set up a core of pilot biologists and not just for waterfowl surveys but they had them assigned to refuges and the big game and had, had them scattered around in others but primarily they were waterfowl biologists because it lent itself so uniquely to monitoring waterfowl from the air where you could see big areas and areas that you couldn't get to on the ground and that's, that's where it developed immediately after the war.

Q Where did you get the planes?

Well, the Army Air Corp and the Navy Air Corp, it had thousands and thousands of airplanes they no longer had any use for, they were just, they were just surplus airplanes rusting out on the fields everywhere and all we had to do was just go and, we did get some new ones, we did that but our larger airplanes, the Gremlin Goose and the Gremlin Widgeon, Navy airplanes and the, we did get the Piper Pacer they were new, new aircraft and we had oh, other, other small single engine aircraft that we got and then as we got new aircraft better suited we worked them into the fleet but first it was all military surplus and we're still using

some of those, the Havelen Beaver, when I, here in Alaska we had an allocation of I think it was 30, between 30 and 35 aircraft, I was going to say 35, it may not have been that many, 32 is a number that sticks in my mind, but at any rate, that was the number we were allocated by Congress, these were Congressional allocations and that was to serve everything up here and we had a lot of obsolete aircraft and out of that 35 we had some were, weren't really serviceable. Over in Canada the Havelen aircraft had been making for years, using it in World War II and it was designed primarily, specifically as a bush airplane, a single engine bush aircraft and, the Havelen Beaver and our military had gotten a hold of several Beavers from Canada and we were using them in the military and all at once, by that time I had been transferred into Washington and was kind of put in charge of our aircraft fleet nationwide and I don't remember what our total allocation was nationwide, ours up here was 30, 32, 30 or something, anyway--

(Tape Change)

We, yeah, we can't get away from aircraft so, when I was back in Washington I heard some, through some grapevine that the military had released a few Beaver aircraft and they were, they were out, down at Davis Bonfan at Tucson, Arizona out there on the, on the bone yard and I'd always been fascinated with that, with that aircraft and I called, I called up to Alaska and asked Therin Smith whose still there, still in charge of aircraft up there and I asked him if I could get a hold of some Beaver could he use a couple or how many want you, and he says, well, he says his allocation is full 32, he says but some of them are no good, he says I can, I'll get rid of them if you can get some. So, I got a hold of these people down at Davis Montana and says yeah, we can use some the Havelen, a couple of the Havelen Beavers and just on a chance that Smitty could get rid of a couple and they had a couple that were useable so I went down and I met him down, I met Smitty down there and they didn't have two Havelen Beavers they had a flight line of about 40 or 50 of them lined up here, wing tip to wing tip and I started salivating but there wasn't anything I could do about that and this, this guy

in charge those aircraft there on the flight line I said well, I'd like to have a couple of those Beavers, he says two, he says why do you only want two? And he says, counted off ten and he says take those ten and get them out of here. I had no authorization to do that so, but I did. I took ten Beaver and without informing anybody in Washington or without asking anybody and I said to Smitty, I says can you get rid of some aircraft on your flight line up there so we end up with the right number? He says we'll work something out so, he, he called three or four more pilots down to Tucson and he and I were there and we started de-mothballing these aircraft and they hadn't been there but just a very short while and they didn't need anything except just to get some cosmoline off of them and get them ready to go. So, we did, we started putting them in service and as fast as we could bring pilots there from all around the continent so we could spread them out and they weren't all in one pile. We started, he started checking our pilots out, putting those aircraft in the air and in a matter of three or four days we walked off with ten, with ten Beaver. Now, those were World War II airplanes mind you and there are three or four of those still in service, in the air with the Fish and Wildlife Service. One of them Bruce Conard is flying, that's the one that Bruce has got, that he has converted. So, you ask about aircraft yeah, we are still flying World War II aircraft and there's, there's an occasional two engine aircraft, we've still got some of those in the air, World War II so yeah, what are those 50 years old? More then that, more then that. Some days we have to push a pilot pretty hard to get him up in a cockpit, he takes a long look but, but we've got mechanics that keep them in good shape, keep working on them.

Q Talk about, I understand there was a, I don't know if you were around then, but there was talk about, OAS was unhappy with that Bruce had that Turbin Beaver and they wanted him to get rid of it.

Yeah, they, they thought it was too expensive, there was no mission that it could, that it could serve, that it was just a status symbol, it was you know, they, and, and I think the primary reason is that is that it wasn't their airplane. They, they

didn't have any control over it. If it had been their airplane they'd have taken an entirely different outlook on it. I'm, you know, that's the kind of a snide way of, of saying but I think that probably had a great deal of truth but that airplane has been an, sure it's been an expensive little airplane, it's, but it has served it's purpose well and we still fly the Mexican surveys with that and I flew the Mexican surveys many, many years when I was in, flying out of DC, back when I was in charge of the program back there, it went to Mexico several winters flying the surveys with the Havelen Beavers, good airplane, they're still--

Q Can you talk a little bit about the Mexican surveys? I mean there has been some grumbling from, from the Canadians and the Mexican that the survey needs to be more focused, that a lot of the information that they are getting now just isn't that reliable, for instance, they were seeing only 20 thousand redheads along the coast and if they went a little bit inland they would have found 300 thousand, if they looked, you know? Talk about how that was set up and --

Well, you know since I, since I left that I really can't speak to that because I haven't seen it, all I know is the, the black Brant survey down the west coast that Bruce flies every year but I don't know how much they do survey on the interior of Mexico. I did from both coasts several, several times I have flown, both the coasts and in the interior of Mexico but that was years ago and what they're doing now I really, I really don't know. I can't say. I do know that we found a lot of redheads, yes, a lot of redheads in the interior. I don't know what they're doing with it now. So, the Canadians and whoever else they may have, they may have a good point. I don't know. I just, it just beyond my comprehension.

Q What's the history of those Mexican surveys? Can you talk about that?

It started right at the end of the war, they started aerial surveys in Mexico and it was Bob Smith was, very beginning of those and a couple of other old timers that have long since retired and I suspect have died.

Q We are going to try to interview Horton Jenson, did you know him?

Yeah I knew Horton very well, yeah. But those surveys started right at the end of the war and that's why, that's why I wish you could talk to Bob Smith because that was his primary, his winter focus and he knew as much about the winter surveys as, as anybody because he flew them every year from the end of the war till he retired and he flew with literally dozens of people flew with him as his observer, Horton being one, I was one, Ross Hansen who has long since died, Ross was a flyway biologist that flew in Saskatchewan, his, he was a primary flyway biologist in Saskatchewan. He flew winter surveys. Ross and I, my first trip to Mexico was with Ross and Bob and Ross (inaudible) Hansen. He was a character. He was a good pilot. We always used to kid him. We, we used to say even, even you Navy guys could fly. He was, we had several Navy pilots, he was one of them and we used to kid Ross, yeah even you Navy guys could fly.

Q What is this controversy between Patuxent, Walt, Chrissie, our guys and the flyway biologist when you went to Washington?

Well, Walt had, I don't remember what his job title was but, but he ran the waterfowl program and, with kind of an iron fist and what, the way he perceived the program, the way it should be run didn't, didn't always square with what the guys out in the field that were doing the field work, the flyway biologists, there was, there was sparks flying between Walt and the guys in the, in the field from the outset and over the ways the surveys should be run, how they should be set up, yakity, yakity, yak every, all the time. Well, when I, I was very fortunate when I came to Alaska and came up here I wasn't under Walt's iron fist. I answered to the administration here in Alaska. Technically, I set up the surveys so they were compatible with what the guys continent wide were doing but I could do it as I wanted to do it to fit our area, our birds, everything and I wasn't answerable to Walt so, he and I got along reasonably well compared to the rest of the flyway

biologists because I could do it my way, the way I felt it should be done and had full support of the administration staff up here and answerable to Walt only for some of the technical aspects but between him and the rest of them it was, it was just, oh there was I suppose there was some professional jealousy among them and it was but, by in large it worked fairly well. I mean, we made it work. Every year, that was one thing, that was one thing that we would kind of wash our linen. Once a year we got together in the wintertime, late winter before everybody went north for their surveys and all the flyway biologists and the ground people and Walt and his staff out of Washington, someplace off out mid continent we would all get together for a two or three conference and we would all lay our differences out on the table and we would sit and we would argue and we would bicker and, and we would choose up sides and, and we would go through all of that and by the time it, two or three days of that, we would all come together and work together and have it ironed out until the next year and that was a, an annual thing. That was, that was an annual meeting I think we all kind of looked forward to.

Q And they still do it.

Yeah, they still do it.

Q The pilot biologists get together in April every year.

Yeah.

Q You know one of the things that, that we just finished a film on, on aviation, aviation and surveying and I made a point, we made a point in the video that despite all the habitat losses that we've experience and increased human population and all that, that the birds are doing as well today as they've ever done in this century, I mean as far as total numbers and the point it that, that it's

the management, the surveying, the information and all that. Could you speak a little bit about that, because that's a thing that you can be really proud about?

Well, I think it, it starts with habitat, saving habitat through the records system or rules, law, regulations whatever, so that the birds have a place to come back and nest. Through regulations, we have, we have had some strict but I think for the most part fair hunting regulations so we've been able to save breeding, a breeding population of all species. We've saved a population, they've had a place to go back to nest. They've had a place to come back to winter habitat. I think that has been one of the keys to this whole thing and then through refuges we have been able to develop refuges, save water areas and we've had, and I, I say we, it's and that's we in the broadest context, not just the Fish and Wildlife Service, the Fish and Wildlife Service has been instrumental in getting Ducks Unlimited, we used to fight like cats and dogs with Ducks Unlimited, if you talk about fights you should have seen those. Well, we've come together now, Ducks Unlimited and Fish and Wildlife Service, we now met some common meeting ground and they have been highly instrumental and all the other conservation organizations, that's the, that's the we that have come together and have saved and developed habitat for the birds and we've learned, we've learned an awful lot more about the birds and vegal species, where they are, how many there are, what we have to do to save them, how many we can hunt and how many we have to save. All of this information we, we that collective we again can put together and are able to use and that, okay, you mentioned that as an interesting point, it was only a couple of days ago, must have been on TV because I can't read anymore but it was within the last very few days I heard this very point, it was on one of the wildlife programs on TV, it much have, it had to have been but it made this very point, about the waterfowl, that they're in as good a condition now as they probably ever have been since we started managing them or attempting to and it. It speaks well, it speaks well for, for our total programs. In the early day I say the way we used to fight with Ducks Unlimited, we had two basic philosophies. The Fish and Wildlife Service wanted to sit on all the birds

and save them, the minimum length and types of seasons it was possible save as many birds as possible, Ducks Unlimited they wanted to shoot as many as was possible, they were coming at it from the other end because that's how they got their funds, their money was providing unlimited hunting for a unlimited number of people. Okay, the Fish and Wildlife Service was coming at it from the other way, save them. And, we'd get together annually and fight over that central point. Well, we've come together now and, and, and DU sees our point of view and we see they've got a point too that if you don't give people something to hunt they won't be willing to work to save them and I think that probably is how we all made this thing work.

Q Just recently we were in Memphis talking to Bruce Batt the senior biologist there, I don't know if you know him or not but he was really again and again making an emphasis that DU's, DU's focus is habitat, restoring habitat and making sure that --

Well, that was, of course that was always their major talking point and in recent years they have been able, in a much better manner to put their money where their mouth is. They, they saved a little habitat to start with but not really a lot. They, they said that was, that was their goal and that was their purpose but they really weren't saving an awful lot of habitat but they've been doing a phenomenal job now and primarily winter habitat down here on the breeding grounds, they're still working at it up there but they changed their focus and their primary, their primary habitat work, where they're doing the most good now is one the wintering grounds down here. A point in fact is a little, a little tiny refuge working together with Trumpeter swan society I was one of the early promoters of that. Jim and I I think were probably the first two in the Trumpeter swan society in Alaska. We started it I think an awful lot of years ago when we first discovered we had Trumpeter swans and then down here, after I came down here we established a Trumpeter swan society locally here in the state, just a small group because we found out that we were wintering Trumpeter swan over, over here east of us. We

had a handful and up in, in along the coastline in Canada, into Alaska so we got a Trumpeter swans society, a chapter of the society set up here and we found out that the key to saving and increasing the Trumpeter swan is habitat, winter habitat. They've got, let's say at this time almost unlimited breeding habitat up in, in Alaska which is their, which is their primary focus but we need wintering habitat. We desperately need it down here where they used to be and now it's all being taken over with farms, small farms, truck farms, dairy farms down on this side of the cascade mountains and the Trumpeter swan is fighting desperately down here for a toe hole and winter habitat. Okay, so the Trumpeter swan society and that was it's primary goal and we identified two, three, four very small areas and by small I mean a few acres and we got together, okay, Ducks Unlimited, they joined us, Trumpeter swan society two or three other of the conservation agencies and just recently we acquired a small area over here in, in the not McConner, anyway, just east of here, names and that, okay, that was one of the things that DU has been involved in and others, small areas on the wintering grounds down here and they have been, they have just been fabulous cooperators in these projects and we've got a long, long ways to go to provide enough winter habitat to bring Trumpeter swan back to its potential. It can do it on the breeding grounds but on the wintering grounds it's, it's an uphill battle all the way.

Q Any comments you'd like to make? Any final thoughts?

Well, no, except.

Q Anything about your career?

It's a career far more then I could have ever have hoped for. When I think I could have gone ahead in medicine where I started it is, I don't know where I would have ended up but it would have been pale in comparison to the career I've had here, it's and, and the friendships, the friendships I've made. I've, I've worked

with literally dozens of real fine people and good biologists. I've, I was, I've been fortunate in the positions I've held in Alaska and in the state of Washington and Alaska and Washington, DC and I ended up my career out in the Pacific. I hired a couple of real good people while I was out there that are still with us but that's one of the things that I really am most proud of is some of the, some of the people I hired that are, that have been with us and are still around, some fantastic people that, that and three or four of them without, without sounding pompous I don't mean to be, but two or three of our best people I literally rescued from the sige heap, they were going no place with no purpose, no guidance, no, no they were just out there floating and some how or another I, I saw that there was some, some value there and I talked them into coming in and joining the program and in effect joining me in Alaska and elsewhere and they stuck and have, and have, Jim King being one of them, I brought Cal Lensink in, he was kind of just drifting around out there with the state. I brought Cal into the program. Others that were just, they were, they were, had a wildlife background but they weren't doing anything with it and, and when I brought them in and, and kind of rescued them into, into here with the service and they, they took hold and but not just those, just to name two or three or four but there are others too that --

Q What is really neat is that you guys, you and the people that you hired made a difference, I mean made a tangible, measurable difference.

Yeah, I, I think so. I really do think so. But it, but when you, when you sit and start enumerating these things and pointing them out and, it makes you sound kind of pompous which isn't, isn't it at all it's just that that's the way it worked out. It worked out so, so very well and I look back, that's, that's well over 50 years ago.

(End of tape)

Jerry Lawhorne

Well, my name is Jarrett Lawhorne and I've been up here since, since these mountains over here were just little guys. 40, 53 years I've been up here and been in aviation all my life, made a few airplanes of my own and then I, I was primarily responsible for this thing and you know, when you surround yourself with good people and keep them pointed in the right direction you end up with a good quality product and that what we've done here. Every part and piece on this airplane has, wasn't put in there willy nilly it was given thought so that, well it's like the control wheel here, it's got a disconnect on the back side here and it stays right here so if, if you've got a Senator or somebody that wants to get up here in the front why, he, he hasn't got the capability of driving the thing which is good you know? And then when everything is in motion all this stuff is up against the firewall, the tail wheel lock is up and the power levers and condition levers are up, the floats are up and the wheels are up and when he gets in his coat collar can't catch on any of the switches you know and turn something off that you don't want turned off you know? If you are up there going along and all the sudden it gets quite outside somebody's got their coat collars in one of these switches so that's why everything is flush, almost start ruining stop switches.

Q What were the uses for these aircraft up here as far as, I mean I guess law enforcement and surveying and what were the requirements that you had to do to make planes be able to do those missions?

This was originally a G-21A, a Gremlin Goose, it had big round motors on it and you had to do very few things to certify it civilian wise from it's military configuration and it turned out to be just an excellent camp providing airplane. You know, before statehood why we had stream guards up and down the inlet, all over and they had to be supplied all the time and the Goose was just the right size airplane for river work and shallow lakes and it's a good durable thing and the Fish and Wildlife had 13 of them at one time. They were, as the military

surplused them, the coast guard and a lot of them were embassy geese, they were scattered around the world as an embassy airplane because almost all cities way back then and even now are adjacent to water so the amphibian turned out to be a good thing and they're built like airplanes should be built and this thing was built in 1945 and then we modified it and tried to maintain the same quality of workmanship and it's a—

Q Were they used for survey work?

Yeah.

Q Migratory bird survey? Talk a little bit about that.

Yeah, they were, they were, this thing was made for off shore patrol and survey work and they surveyed the waterfowl clear out to the edge of the continental shelf. It's surprising how many birds are out that far and we knew nothing about those you know for the oil industries input and that sort of thing and so this was used for that and it's used for walrus survey in the wintertime and it's been pretty close to Russia, all the walrus surveys and whale surveys, monk seal surveys. It's been down in the, down in the Caribbean on the monk seals, they were supposedly they thought they were extinct down there and they used this down there for a couple of weeks surveying all the little islands down there and they didn't find any monk seals so they had kind of solidified that, that porter thing.

Q What was your job primarily in the years that you worked with the Fish and Wildlife Service?

Primarily maintenance, I was the chief of maintenance and of course always filled in as a pilot when they were needed, a lot of the, a lot of my crew were pilots as well as mechanics so the input that, in this conversion you had both, both aspects, you had the pilot's aspect of the thing, what's right and what's wrong

and the maintenance part of the thing. Can I get at this thing that I'm about to build. It's like this instrument panel here, you take 12 screws out here, pull the wheel back and this whole thing is pivoted on each corner, sits right out here in your lap and you can work on this stuff, it's not like a factory airplane where you're upside down and, and your neck's half broken trying to get at some silly wire somewhere. It's just one of the things that we built into it.

Q Did you have to go sometimes out on the field to do repairs or on site when a plane went down when it shouldn't have?

Oh, yeah, yeah. I've got, I've got a number of those and you know, airplanes up here are used like trucks down in the states and down in America I call it, if you don't use them you won't bend it but if you use it once in a while you'll bend it. Well, that was my job primarily, if any one of them got bent I went out and fixed them and cobbled them up and drove them back so they could be repaired properly and so you get a lot of experience out in the bushes trying to, well, I had an engine change one time at, at Saint Michaels in the wintertime and there was no, no timbers or anything for a tripod, out there, this going Stenson was out on the ice and had to get some timbers so the native folks went over to Stebbins which is on the other side of the island and used a dog team and hauled three timbers over so I'd have a tripod and it's, it's tough to do some of that stuff out there in the winter and keep from getting frost bit, the tips of my fingers are still sore whenever it gets a little bit cold out, I had them frost bit but that's part of the show you know?

Q What were the challenges of flying in Alaska in those early days without nav aids and weather reporting and I mean it would seem it's a whole different back then then it is today.

That's true. Some of these instruments were almost worthless except in around Fairbanks and Anchorage and a few of the bigger places because there was no

nav aids except the automatice direction finder, the ADF and we always called that the town finder because you could tune it into a radio station or a FA station and the needle would come up there and say go there, this way is home and that was great but the weather was, was pretty few and far between, the weather reporting stations and there was a lot of pilot input, if somebody started through Lake Clark pass or some where or couldn't make it why they'd call up the local flight service station and say hey, we've tried through VFR through the pass and the weather is way down so then, that way the pilot information or their weather information got around to all the rest of the pilots so they wouldn't have to experience the same thing and ice conditions, you know in the spring supposedly a frozen lake in the spring time, it may have three feet of ice on it but it's vertical granules and it just all turns to mush when you land on it so you've got to be able to read a lot of this stuff and experience it and you know, you can't get experience unless you bend one once in a while and then hopefully learn from your mistakes so you don't do that again.

Q What was the transition from I guess in the beginning the planes were looked at, at a law enforcement tour and even took some convincing to get the powers that be to use them and eventually they started also being done for bird surveys. Talk about that.

Yeah, it was a, we made a special airplane for, for Bruce and the migratory waterfowl people, flyway people so that they had a long range turbine capabilities, safety wise and window posts and stuff in the right place so they can see out of them and we had to make due with a lot of standard airplanes and then we would have to modify them occasionally in order to comply and to meet the demands of, of our pilots. They were pilots incidental to their main job, just like having a driver's license so part of my job was to change the airplanes to where the average biologist so to speak could fly the things with a minimum of risk and we did a lot of, a lot of that kind of stuff and being a government agency back then we weren't required to, to meet FAA standards, CAA back then and

actually we, in Fish and Wildlife we installed and instigated the first set of big tires on light planes like the Cessna in there and all of these over sized tires on all these airplanes up here and we did that. We found out that the military had what they called tandem landing gear, two wheels, one in back of the other you know, on, on a truss, on the axel and they were great to a degree but if you get them on a hard service it took a twenty acre field turn them around in because you're trying to slide one wheel all the time and of course the landing gears would break and so we established big tires, we, we took a set of good sized tires over to the air glass engineering, people that make fiberglass skis and stuff and ask them if they could build us some adaptors to adapt the big tire to that size wheel and they did and we in Fish and Wildlife aircraft division set a lot of precedence around the state early on because the operators would always wander over and see what the latest thing we had done because we, we had to keep a step and a half ahead of all of the violators so you know, we kind of established a lot of the early criteria on how airplanes are set up and things to put on them and how they worked and then industry then would grab all this stuff and go with it and that's fine, that's how progress is made anyway. If you settled in the same old rut why, you end up with the same old Spam can out of Wichita somewhere and you know, it's--

Q What do you think is your greatest legacy as far as the years you've put in/ What are you proudest about?

Well, I was able to do what I like to do and I figured that that was the very best that I could do, what I liked to do throughout my whole career and that's, that's 50 years of aircraft and I've always loved that. I've never liked big airplanes they, I always thought they were complicated until I built this thing. But, the little guys I can drive all of them and so I appreciate both sides of the picture and being able to do what I think I do best for, for my whole career I think that was the, was the best part of my life and of course these are, these are good examples you know, I have some of my thought processes in it and I hope they stay with us for a

number of more years you know? And this thing has been converted 30 years and it's still great shape and well maintained, it'd be good for another 30.

Q What do you think of the current way that the Fish and Wildlife Service handles it's aircraft with OAS and all of that? Do you think something was lost in there?

Yeah, it definitely was lost. Fish and Wildlife used to be a can do outfit. If someone in the field had a project that they couldn't quite get a handle on or were doing it a little funny, the rest of us would jump in and help and maybe do their job, let them do their job better by attacking it at a different, from a different aspect and it didn't make a rip if it was fixing a boat trailer tongue or, or hanging fish traps on the wings, underneath the wings of a beaver or whatever it took putting a camera hatch where it had never been put in an airplane before or you know, to do their job correctly and we were a can do organization. Now, the minute it went to, because the Department of Interior, Office of Aircraft Services then we became a can't do outfit. You can't do this because you're not a mechanic. You can't do that because you're not a pilot and we can't help the people that want their boat trailer fixed or, or their car's got a flat tire or something and run out there and help them, can't do that, that's we because another government bureaucracy that I don't think that should ever have occurred, it's, it's that simple. It's a waste of the tax payers money and I resent that even being a former government employee, I, I just I never did like it.

And Smitty would drive her around to various places and then every once in a while he'd, he'd just dump her off someplace out in the bushes, out there at an airport and say yeah, you've got to take and airliner now because I can't legally fly you in this Gremlin Goose because it's not all weather capability and all this stuff but I'll catch you at the next place over there, if you go over there and they did that a couple of times and she, she could see that the bureau airplanes were not outfitted correctly and (inaudible) got along real well with her and so she

dredged up some dollars for this thing and this happened two or three times and government wide I think there's about 750 thousand dollars in this thing but there is untold man hours that went into it that were given away so to speak, like me for instance I, I lost a lot of leave time, government leave time because I, there was a job yet to do I didn't, didn't want to leave it undone, I mean, every time I would stop something in the middle that may have meant that somebody else couldn't take up the slack you know?

Tom Wardely

My name is Tom Wardly. Thomas H. Wardly and currently I'm retired but I donate a lot of time to the Alaskan aviation safety foundation where we put on educational programs all over the state of Alaska for the entertainment and education of pilots and passengers so that Alaskan aviation accidents will be diminished or reduced.

Q Talk about now, your relationship with the Fish and Wildlife Service. When you began and when you finished and what your job was there.

I came to work here in Anchorage in 1951, in September of '51, in Seattle I'd met a man named Clarence Road and he was a very charismatic individual, convinced me that Alaska was a great place to work and the Fish and Wildlife Service would be a good place to work so I came here as the Director of Maintenance and a pilot for the airplanes based in Anchorage. At that time we had about 40 airplanes scattered all over the state of Alaska and flown by a few professional pilots and a large number of enforcement agents in both the commercial fishery and the trapping and recreational fishery business and also in the sport fishing and just the tabulation of wildlife in Alaska. There were a number of biologists just trying to figure out how many bears and goats and sheep and caribou and moose and other animals were here in the state and what resources they consumed, if they were overgrazing the land or there was room for a lot more of them. There was a lot of dissention in how to manage both the fisheries and the wildlife activities in the state and the Federal government had the responsibility for all of that.

Q What was flying like in those days?

Flying in those days was just wonderful, we had an enormous amount of freedom, there was some paperwork involved in record keeping associated with

any government agency I suppose but we had more work to do then we could possibly do and the management encouraged us to just go out every day and do our best and be careful and safe and get the job done. It was, I look back on it as a golden part of my life and as my career as a professional pilot. We had a wide variety of airplanes from Fairchilds, pre World War II Fairchilds and Stenson Goldwing airplanes got in surplus, Valtice, Stenson L1 airplanes, big dragonfly type machines. We had Boeing YL15 observation airplanes and gradually we got some Super Cubs and Pacers, new modern production airplanes. We had some surplus Gremlin Widgeons.

Q Talk about the Gremlin Goose that is in back of you.

We were able to get the number of Gremlin Goose airplanes, some surplus from the US Navy and some surplus from the US Coast Guard and we put them right to work primarily on the commercial fishery law enforcement activities but secondarily in support of the biologists and field camps in my own district, we had about 42 field camps each with two usually young collage students working toward a degree and doing assigned tasks and inventorying either the animals or the plants in their particular area of activity. They were really dedicated young folks lived out in the land and we'd take them fresh food and their mail about once a week and make sure they were all right but they were hardy and very productive. The Goose was a wonderful airplane. It just was reliable and did the job either in the water or on land and served us extremely well and it also got the taxpayers a return on their investment, for they'd been bought for the military services and surplused and they remained in Federal service serving the taxpayers very, very well on their first investment.

Q Do you have anything to say about Bruce's Turban Beaver? Were you involved in all of that?

Well, I wasn't involved in the production of the Turban beaver I had already left the Fish and Wildlife Service and gone to work for the CAA at that point but I watched with interest and it's just been a wonderful, special purpose airplane. In the days when I worked there we were Federal and we had a lot of liberty to modify our airplanes --

We would change the configuration, change the engines, change sometimes the wings and even the tails and the floats and make them into special purpose airplanes that did the job a little better than the standard production airplanes could do it.

Q There was a time when aviation was used primarily for law enforcement and then there was a transition to where it was realized that they would be good in, in waterfowl surveys and all that stuff. Do you remember that time and how the argument was won that it would be a good way to count waterfowl?

Well, no that preceded my involvement with the US Fish and Wildlife Service. By the time I came into the Service in 1951, the waterfowl surveys were well established. A man named David Spencer and other of the earlier pilots had proved the worth and the merit of the airplane and in, in censusing waterfowl and wildlife and we just went at the task however it served their purposes the best. We counted moose and caribou as well as ducks and fish and geese and whatever the assignment was why the pilots and the biologists and the enforcement agents just went out and did their very best to accomplish the purpose.

Q (inaudible)

Yes, I was involved in the entire Clarence Roads search.

Q Start at the beginning of the story.

In August of 1958 one of our airplanes and the regional director of the Alaskan element of the US Fish and Wildlife Service just disappeared on a flight in a Gremlin Goose almost identical to the one pictured here. He and his son and the senior enforcement agent in Alaska had gone on a patrol in the artic north of the Brookes range and also a little south of the Brookes range and they just didn't come home. So, we mustered a search and it became one of the largest aerial searches ever accomplished in the world for anybody. The US Air force participated and all of the Fish and Wildlife equipment participated, a lot of civilians who had known Clarence and were very fond of him donated their airplanes and their time and came and searched and as it turned out the wreckage wasn't found until 21 years after the day he disappeared, right to the day. Some lady hikers in the Brooks range, one of them didn't feel up to hiking that day and wanted to rest so the companion saw some colored material up on a hillside and thought well, she'd walk up there and see what that bright color was and thinking it might be plants or vegetation I guess and it turned out to be the wreckage of a black and orange Gremlin Goose and she realized that there were still human remains in there and identification material, so she hiked out to the closest communication place where she could contact the state police. They came with a helicopter and during the night it snowed and in the morning they couldn't find the wreckage and it wasn't until after the sun came out and the snow melted away that they found it again, that was the end of a long hot summer and our conjecture is that it might have been the very first time that the wreckage of the airplane was out from under snow cover. We have good reason to believe that it was snowing when the accident happened because the airplane came from the factory equipped with a very nice anchor and a long white rope. In this case, the crash was so violent that the anchor went out the nose of the airplane and deployed the rope full length down the mountain side and also there had been five gallon tins of fuel in the bow of the airplane and each of those tins was smashed flat and erupted upward so probably a wave of gasoline swept down the mountainside ignited by sparks from the crash and started the rope on fire

and the falling snow put the fire out because the bottom of the rope was still white, only the top was charred.

Q Do you have any comments on the can do atmosphere that pervaded in the Fish and Wildlife Service as far as mechanical problems out in the field and that sort of thing?

Well, we made out best effort always to hire pilot who had mechanical aptitude and most of them were certificated as mechanics as well as pilot and they were responsible for maintaining their airplane when they're away from home base and they would call in if they needed parts or services and we would sometimes fly a mechanic out to assist them but the people were kind of self reliant, independent by nature or they wouldn't have been here in that job and they just did a tremendous job of keeping the airplanes going and getting the work done. There was not much second guessing or after the fact oversight. We were just expected to do our best and we all just pitched in and did our best.

Q (inaudible)

Therin Smith was just the born optimist. He was trained to fly mostly in World War II. He had started to learn to fly before World War II and went in and became a B17 pilot during the conflict and after he was discharged he came to Alaska and worked as a bush pilot in western Alaska primarily around Bethel and somehow he became acquainted with Clarence Road and hired as the aircraft supervisor of this emerging fleet and this new, newly formed department within the Fish and Wildlife Service and he was very easy to work for. He had a very realistic idea of how much time things took and how much difficulty would be encountered and he was just an extremely skillful pilot and a visionary, he could image improvements to airplanes that would make them non-standard that would render them more useful to the service and in his career he helped produce the modified Beaver that Bruce flies now and a modified Gremlin Goose that now his

son has custody of and it's still in service and doing a remarkable job that far beyond a standard goose as far as range and altitude capability. It's, it's a very unusual airplane, one of a kind in the whole world and luckily it's back here in Alaska where it serves very well.

Q Small town atmosphere, and the lack of navigational aids?

Most of our flying was contact visual flying. We rarely flew IFR or on instruments because other to get someplace that was useless, if we were trying to look at animals or creatures on the ground or census fish in a river you had to be in good visual contact with the ground. The atmosphere within the Fish and Wildlife Service was one of a large family. You knew if you had to stay overnight in McGrath or Cottsaview or Gnome or anyplace else you'd be in the Fish and Wildlife family house. They'd have a bed for you and meals and it was just one of the happiest organizations I've ever known. I was, I was very privileged to be part of it in those days and I look back on it with a great deal of fondness. The nav aids were four course ranges. We didn't have any VOR's in those days. They were just starting to be introduced and I guess the challenge of generating--

The challenge of generating the instrument airways and the instrument approaches to the cities is one of the things that caused me to transfer from the Fish and Wildlife Service over to the Federal Aviation Agency and continue work in that spectrum because it had a great challenge, very different from the Fish and Wildlife Challenge but an equally great and satisfying way to spend my time.

Brina Kessel

I'm Brina Kessel and I was born in Ithaca, New York and then went back to Cornell for my degrees. I got my Bachelor of Science degree there in vertebrate zoology with an emphasis with Dr. Arthur Allen in birds. Then I went to the University of Wisconsin for one year where I got my Masters Degree and then went back to Cornell to work on my PHD and at the end of my PHD I sold my 1940 Buick, it was a, it was a junk heap you know, an end of the war junk heap and got enough money for a one way ticket to Alaska and I knew the minute that I got here that this was where I was going to stay. I always considered myself a tundraphile, particularly the high rocky kinds of tundra.

Q What year was that?

That was 1951. I got here, the head of the department in, in biology here, she was the only other person in the department at that moment, she was going on a sabbatical oversees and so she wanted me to come and get to know the place a little bit in the summer time. So, so I did and taught summer session. I had a minor for my PHD in botany but I never took the freshman course. It was suggested by one of my professors (inaudible) course I never did and so I had to learn my botany the night before. It was a small class I think there were only five students and most of them were teachers and I knew that I had arrived when the teacher said how do you remember all of this stuff? So, I never told them I stayed up till past midnight trying to memorize this stuff.

Okay, so I came here in '51. I put a, I put a proposal, John Buckley, John L. Buckley was the head of the cooperative wildlife research units at that time and he thought I aught to have a research project for the summer of '52 so, I put in a proposal to the Office of Naval Research and it was accepted but I wasn't allowed to go because no one was allowed on the Pet four reserved, no women unless they were married and with their husbands so I took a freshman man George Shallor and sent him up with Tom Cade, the one that has done all the

work on the Peregrine and the two of them went up there and had a good time on the Colville while I sat home and put, and put up all their dried out salt and bird skins down here. Yeah. All right, let's see. The my, my next summer, no, no during part of that summer John Buckley made it possible for me to do a few flights. I took this, this one down with a crew to do an aerial transect down at Tetland lakes but 53 was when I really go involved with the waterfowl work out at, out at Minto lakes and we went out there to make just a general study, actually a couple of graduate students had done a general study out there and they didn't even realize that there were both species of Scop out there and so I got to Bob Henman and, and Pete Shepard as two field assistants out there and they did a wonderful job and we had a wonderful time working out the problems of the greater and the lesser scop.

Q Describe what the situation was like and how you moved about and whether airplanes or boats or working with the natives or what the work you were doing.

Well, mostly we had as I recall, a canoe with a kicker on it and we did most of our transportation in that. If it was any really great distance, if we were going down to another section of the marsh when Ray Trembly flew in he'd pick us up and take us over there for a while and we'd do our work down there and then every, every August we ran banding drives for all kinds of ducks but it was, it was partly to get the greater and lesser scop and I could tell them apart by that time by their bills and, and primarily by their bills. So, we got an awful lot of good data on the Scop and then when, what was that summer? That was the summer of '54, after working there I went up to Sellawick and Pete Shepard and, oh gee I forget the name of the other fellow that was with him up there. We had a wonderful time driving Scop into nets up there and of course we knew that those were all greater Scop and so I have another really good set of data there. Never published these data until it came up with this birds of north American count on greater Scop and now you'll see some of the original stuff there.

Q When you say data is that measurements?

Measurements, characteristics of nests, clutch sizes, that sort of thing. Yeah. Habitat, what kind of habitat and so on that they were in. Were they just in the channels or were they in the ponds, the edges of ponds and that sort of thing, yeah.

Q Was this through the University or was the Fish and Wildlife Service involved in this either in funding or --

Well, you see I was working in a lot, all of this stuff really as kind of an associate of the cooperative wildlife research unit and so I had papers that allowed me to fly all this sort of thing but didn't have any salary, I don't believe I did anyway, I don't remember having any salary. Yeah, but you don't need that when you're working out in the field.

Q Talk about waterfowl research in general because it's in Alaska at that time, I mean was it just beginning or I mean in terms of setting up transects and systematic studies or, or was it still sort of finding out a way to get a handle on trends and populations.

Well, I think, I think it was starting down there and on populations, productivity, these kinds of things, habitat productivity and all these, these characteristics and it was what the graduate students were up to and each one had their own project and they all kind of folded together but I gather that a number of the refuge managers in the state at that time were already involved in their own local ground studies. I know they were at Cole Bay and I know that they were out at Bethel in that refuge, Cal Lensink was extremely instrumental out there in getting a really good research program started out there.

Q So there was a year to year consistency in surveying?

I don't think so. I have no idea. That consistency I don't think really came until Hank Hanson decided it was a real necessity and he was the one that really got the techniques set up and what did, what did we figure that it was what 1954 or '56 that those first real transects that have since been pretty much carried on the same lines with I guess some adjustments here and there but that was when they finally became consistent. I was never on any of those early consistent ones. We were trying to find were the ducks really were. I flew out once with, let's see I guess that was the one with Joe Minor, down towards McGrath area and we had, we had a lot of birds and moose down there.

Q Did you help with some of the ground truthing, coming up with visibility factors and --

Well, our graduate students did. Lura Winski did, did quite a lot, in fact his thesis, his master's thesis which was at what '58 he did that but the field work was done several years earlier and he had done a complete census of the reeding birds, the nests and everything that he found of all species on this little strip, oh, it's probably as much as a mile south of the cabin and so he knew where all the nests were and so early in the morning I remember that we, we flew a flight I guess, I don't remember which pilot it was but I suspect it was Ray Trembly, that he put it down to what, a hundred feet and flew across it and that was the first ground truthing that I knew about anyway. I don't know whether, whether the present people ever saw that or not, probably not it's not worth it because it wasn't standardized you see.

Q What other work? You spent most of your career with passerines and those --

No, I've, I've been a bit of an opportunist working in the habitats that, that are in the area that I'm doing contract research in and that sort of thing I usually try to set up study plots of one kind or another so that I get stuff relative to densities from one year to the next and the kind of habitat that the birds are in. I've always had a little private disagreement with a lot of people on what's habitat because a lot of people think a good biologists, graduate students and so on, that vegetation and habitat are essentially the same thing and they certainly are not. You have to sub divide that very much in order to do habitat. Habitat is what the bird itself uses and not what happens to be other stuff that's around in the area. So, I've, I worked on that concept a little bit in some of my publications, yeah.

Q Were you involved in, in sort of the environmental impact assessment on some of these larger projects like the pipeline and some of these other dams that were--

Yeah, this is what I was involved with with the SSITNA hydro electric project which, well, I did it by habitat and we discovered for instance that the river rine cottonwood way down in the low lands were a tremendously productive habitat in general with sub habitats underneath it of and that was a really important part of, of this sort of thing and then I did work actually it was before the hydro electric project, I worked for northwest gas pipeline company on the upper Tannal and did some of the same things there. Mike Spindler, he had done some work at Kramers on this sort of thing and he and I got together and put both of our ideas on, on a research plan and went down and got some really good data on, on that sort of thing up at Tannal, yeah.

Q How was that data used? I mean did it effect their construction or, or the paths that this thing went?

No, because it went down, the pipeline went from Proto Bay to Valdez but what was it? Northwest Gas, no, what was, what was the pipeline that was going to go across the artic national wildlife range and go down the McKenzie?

Q The gas one?

Yeah, well it was going to be, I'm sure that the companies wanted to open up that route down the McKenzie eventually and so they were pushing for that and northwest gas was a, was a little company and had not done any background research so they came here to the University to talk to people that knew the area so that we could come up with stuff without spending years to collect these kind of data and that was my first experience at an environmental impact and having to go in front of an administrative law judge down in Washington, DC to justify it, I had no idea that this little piece of scrap paper that I'd written out down there and submitted to the company turned out to be the quest, basis of all the questioning that I got in front of the administrative law judge.

Q What sort of questions? Scientific? Biological?

Yes, just about everything and the oh come on, artic, artic gas I think it was, yeah that was working out of Edmonton to, to do the northern stretch and interestingly enough the head of the research on that project had written to me about sub contracting with a l,l, list of literature from up there and I had gone through and, and gave them a big list of the literature. Well, I was pretty shook when I got up there on the, on the (inaudible) besides the judge and in walks my friend, sits down with all his lawyers over here and kibitzed with them all the way through you know, and I was not very happy and the judge turns out to have been another Cornelian. I don't know whether that made any difference or not but towards the end he got so tired of, of the other company badgering me on questions he'd say, oh come on you've asked that three times now, aren't you listening? Things like that and I found out later that all the kibitzing that they

were doing down there at the general table was, I'm desperately trying to think of this fellow's name. I know it just as well as the back of my hand but, but anyway he was apparently trying to tell them don't argue with her, she knows what she's talking about. If I'd known that I think I would have been a lot more comfortable.

Q What was the contention? Why was it in front of an administrative law judge?

To pick the best route and so all of the data, environmental data and engineering data, all that sort of thing. It was to lay out both sides and to see which way it should go. If it was going to down through Canada.

Q Do you have an opinion on that?

Yeah. I think, I think there is, there are books and books and books like this you know, of the hearings and that sort of thing.

Q And your testimony was based on, on your field work and observations --

Yeah, well. Maybe I can tell this story now but I had never been up the, the Prudo Bay Road. I had studied parts of it. I had worked on some of the, the raptor material so I knew some of it and then northwest gas pipeline had some of the engineering designs and that sort of thing laid out in these big tables and I browsed it you know and so on and I can't believe how many of those questions I was able to answer because I had seen this on those drawings around there and I had just enough sense to put two and three together and those people never did know that I had never been north of the Brooks range at that time.

Q Has there been a change in the business culture, in the business approach to the environment? Do all the laws suit? Do you think there's been a turning around that people--

Well, they've certainly made a difference and the pipeline, have you been up the pipeline at all? It's really kind of an engineering feat and you can get in certain places where you can see the light reflecting on that pipe and it goes zig zag zig zag all the way down and that's it, you know, there's no, no real scars for most of the area at all, you can drive underneath it and go to see some of the old pits and things which were nothing but gravel mountains in the first place. So, really the environmental damage, the main environmental damage and I can't complain about that is that it has opened up vast areas of wilderness and made it possible for people to go up the road, get on their snow machines and four wheelers and go hunting off the, off the edges.

Q Talk a little bit about the contribution that Alaska's waterfowl, we're talking ducks and geese make to the continent as a whole.

Oh, dear you should ask Bruce Covert about that.

Q We will.

Good. It, it does a lot but it doesn't do everything. You have to put it together with additional knowledge to know that the greater Scop for instance, from west of the Onoko maybe, at least a lot of them and then farther west from that, from Bethel area all seemed to go down the north, the west coast and so that seems to be the population, this is from banding record. From our bandings at Minto, most of it, most of them go east and down the regular flyway that takes them through northern Alberta and down more to the Mississippi and the Atlantic, Atlantic coast.

Q Central flyway?

Yeah, yeah. So, there's been enough banding there for that but one of the things that for greater Scop, for greater Scop and trying to tell greater from lesser Scop, you are really in a mess because no ground work has been done for many, many years on those, on any broad scale and, and so we don't know what really is happening. We know that the lesser Scop apparently have essentially bombed in their population. You can look at any number of grafts that have been published that particularly in western north America the lesser Scop have, have really declined and so you look at the interior and you don't know what's happened here, all I've seen this spring practically are lesser Scop and yet a fellow my the name of Connan tells us that there are still lots of Scop out there that they haven't gone down and the people at Great Slave lake also tell us that there has been no decrease in the island nesting Scop from the, one of the arms there in the Great Slave lake. So, I just, you know it's pretty hard to put your fingers on it but I think that more banding partly to give us better knowledge of what the combination of greater, lesser Scop is on the ground plus banding of those birds so that we know whether it's still going or aren't going would probably be worth it. The kind of drives you know, that they could do on the refuges if they, if they had the man power to do it.

Q I think that Bruce and some of the other flyway biologists simply lump them together.

That's our problem with the birds of north America count, is that you, you look at them and they say Scop both species and then, and then people are beginning to use the, maybe I shouldn't say this, beginning to use the Christmas bird counts now for the wintering grounds of the two and the people I've seen on most Christmas bird counts hardly know a Scop when they see it let alone that there are two of them and how to distinguish them and so even the Fish and Wildlife Service is taking this information off of the, the Christmas bird count census sheets it's on the, that's on the internet and so you don't know who, you don't know how many. You know what's there but goodness gracious. I, I tried to tell

them down at the BNA office that it was very difficult to tell them apart and that one of the best of the pictures I've ever seen of the greater Scop, if they wanted to use it on my paper I'd be glad to have them do that is actually the one that they picture on the BNA for the lesser Scop. I have never gotten a response to that. So, I don't know.

Q In the species you've studied has Alaska played a role in the over flights when the prairies are dry?

Definitely

Q Talk a little bit about that.

Well again that's a Conent thing but way back into the '60's we realized when Don McKnight was working out at Tetlan that when there was a drought year that all of these strange oddballs showed up at Tetlan lake and they also show up, birds in general that migrate up the Tannal which is a great quantity of different species, go through the interior of Alaska and kind of fan out a little bit some of them going up to the Celawick area, the Seward Peninsula and down onto the YK delta and they, they get the same phenomenon in, in all of these areas all in the same year and then some of them seem to stick around and develop eventually breeding population, the ring necked duck I think, I think has done that and of course the canvass back definitely has, shoveler have, canvass backs go up and down a little bit and I don't know, I don't know about their success in breeding. They're a lot more canvass backs that go through here and so I don't know how, how many of them are actually breeding.

Q I think canvass backs is one of the species of concern as are the Pintails.

Well, I know. I began to notice from the Juno offices reports that when I teased out the way you're not supposed to do with transects, I teased out the out squaw

and the Pintails and found that they were doing things that they weren't supposed to do.

Q Ray Trembly stories.

A couple of stories on that, that are still sharp in my mind, experiences with ray Trembly. I think it must have been in '53 that I hadn't done very much flying in small aircraft and he was taking me out to Minto or we were both going out to Minto and we took off of Chena, the Chena river and the plane I thought behaved awfully queerly but I hadn't flown that much so I didn't, wasn't even the wiser for it but the plane apparently didn't have enough air speed and so it was doing like this, you know and I didn't know enough to get scared but I understand that after, afterwards that Ray Trembly admitted to being scared but I didn't have enough sense to be scared and then, and then the, I always said that I never wanted to be a pilot because then I wouldn't be scared and that was probably one of the experiences that made me think that. And then one, one year we went out to Minto it must have been, maybe it was another flight in '53 and we got out there and nosed onto the shore and it wasn't sticking very well to shore and he all of the sudden started, well he was going to start to put on his hip boots and he didn't have them so Brina ended up having to piggyback him to shore. My two good memories of, among the two good memories of Ray Trembly.

Q Talk a little bit about Hank Hansen. What role did he play in waterfowl research here?

Oh, well you know, I didn't know him personally very much. He was, he was sort of the driver behind the scenes and developed the organization and then he, the organizations of the censuses themselves, the transects and so on but in addition he kept track of all of the ground work that was being done around, down at the Copper River delta and continuing at Minto and all of the, oh up at Selawick and so on and to this day that is the source that I have to go to to find

out data from the old days to be able to compare to the present and it's a fantastic trove of organized data. Yeah. It's still, they're unpublished except as Fish and Wildlife well, I guess it's Bureau of Sports fishery still.

(Change Tape)

I don't know what I'd ever do if I had to be off of a University campus because my dad was a professor of English and I went to Cornell and I really lucked out there because, this is a terrible thing to say because the draft for the war had taken all of the graduate students and so here was this little freshman real eager, you know to be an ornithologist but of course didn't stand a chance with all those graduate students around but I turned into their only gofer so and so by the time they got back from the war I, I was in pretty good control around there. And I was, I was there for five years. I got my Bachelor's degree in four and then I stayed a fifth year but always wanted to go someplace for part of my collage career so that I applied to the University of Wisconsin to, I wanted, I wanted to study under Ara Leopold but he, he died in that prairie fire the spring of the fall that I was supposed to go and I decided well, heck I'd go anyway. They of course, I learned later wouldn't even accept women in wildlife, it's been relatively recent years that they've taken women in wildlife at the University of Wisconsin, mind you. Yeah, yeah. So, I finished a Master's degree in one year and in addition to the required courses in biology for that degree you had a very structured curriculum, I went and took course out in the wildlife department and got those courses under my belt also. But, I did all of that in one year and then that spring I had a chance to go up to the delta waterfowl research station and meet Al Hokbaum and crowd up there. That was a wonderful experience and to this day I've got fly specked watercolor images of ducks that he was doing just in preparation for other work, you know I have them, I found them the other day in my, in my Hokbaum book. It's really kind of nice. So, I had that experience there and then another, well, see I won't jump. I went back to Cornell then and finished work on my PHD and sold my car and got a one way ticket to Alaska and knew

when I got here I didn't want the round trip anyway. I just loved it here. One of the first places I got a chance to go to was up at Clary Summit which is the nearest place where right on the tops of the knobs there we've got some pretty good dry tundra and I thought now, this is for me. I'm not going home and I was correct, it's wonderful country and I was lucky also because there hadn't been really very much work on, on most of the birds up here, it had been stuff around the coast but not interior stuff at all and so everything was new and so I just started collecting the data.

Q Talk about your work with Ira Gabrelson and that whole project you have and Ira's role up here in Alaska.

Well, I first met Gabrelson when I was at the Patuxant research refuge as an undergraduate. I met him and Clarence Cottem, Roger Torry Peterson, some of these people that have real names attached to them and we, we birded on the eastern shore and, and did some sea bird work right off the coast there and that was a real thrill that I didn't really appreciate until years later as much. So, I had all those contacts back there and then Gabrelson was on the, the statehood, he was, I don't know if he was actually on the committee or was just, the statehood committee, charter commission or whether he was just up here advising them but he made sure that a lot of these concepts of refuges and restricted areas went in and then periodically I would get a, I'd get a chance to see him. We knew each other but not, not really closely, yeah. He published the birds of Alaska in see, I think they stopped putting data in in '57 and so with a coop unit, cooperative wildlife research unit didn't start here until '51, '49 but they didn't have any students I think until '51 and so everything started here at once. Those people that were more interested in one kind of game bird or another and that I was sitting at the other end of the teeter totter and trying to hold down the little birds, get them interested in the little birds and they helped, they were tremendous help. It wasn't that I wasn't interested in the others but they were all taken care of that so why didn't I do something different and it worked very well and then I

was able to turn around and contribute to Gabrelson and Fred Lincoln, I knew him too, to, to the book that they were putting together on the birds of Alaska so it was kind of a good mutual feedback cycle that we had going there.

Q Talk about the updating.

We're not really updating it. We've got so much of our own data. I find that in, in going through Gabrelson and Lincoln that their, their literature search was very good and so often times whereas they're not so clear sometimes in the open text, I don't know somewhere it got dropped in the editorial work along the way but between that and the lit sciendence section we've been able to dig up all that old literature and we go over it very, very carefully because a lot of people go back and use that as their base source on the information of the birds of Alaska, these BNA accounts for instance and where Gabrelson and Lincoln made mistakes, those mistakes are getting carried right forward to the BNA accounts which is, and that's, that's our fault. Dan Gibson and I just haven't got the stuff out yet you know, you kind of feel that it's kind of our fault, that we can't sit on this data and be critical, if we don't get it out.

Q You mentioned something about the way Gabrelson senses the birds, that he just went around the coast?

Yes, he was on the, the Fish and Wildlife Service, it wasn't that then.

Q Bureau of Sport fisheries.

Yeah and they had an annual trip at least up the coast, I think that, was that the one that brought all of the food and everything to the villages. I don't know, but he traveled then around the coast so he has much, a very good old data on the oceanic, the cliff birds that sort of thing and then, since then we had this big outer continental shelf, environment assessment program up here and this was back in

the '70's I think and with those two together you could sometimes see some of the changes that have occurred in the distribution of red face corm reds and stuff like this, yeah.

Q Talk about your work with Mary.

Yeah, yeah. O. S. Mary, he has this book you know, on the birds of the allusions and he worked with Vic Shaffer is it? Who did the mammals in the Allusions, it's a, a fairly early wildlife, Fish and Wildlife monograph and it is a treasure trove because O.S. would never publish anything that he wasn't sure was correct so when O.S. has that in there it's good. I didn't actually meet him until I think it was '53 when I, I got a chance to fly down to the North American Wildlife conference which was held in Washington, DC and that's where I met the Mary's for the first time.

Q When was that?

'53, I think it was, yeah. I flew down Naval, from the Navel research contract that we had up on the Colville at least I got something out of it. Well, I got a publication out of it, too so but I got to meet them and then when they began to plan this trip up here they wrote to our President here and asked if they'd release me for the summer so that we could go up on the Shenjec and George, this George Shaller who had been one of my students, the one that I sent up on the Colville and so I recommended him also for the Shenjec and so we were two of the three kids that went up there. The other was a photographer that did some very fine photographs of the expedition.

Q Describe what it was like, what your work was like, what kind of people they were.

Well, they were wonderful people and Marty sure knew how to make a camp a home and I really learned how to do camping, wilderness camping from her, that one summer it was, it was fantastic. She knew exactly what people craved when they got in the field, you have quite a different appetite when you've been in the field for very long and she knew it and so she had all kinds of candy bars and sweets and she brought along one of these camp stoves that we made Lois Crister bread out of and so on and she just, she just kept the thing going. She knew how to, well with the help of the men, they'd set up outside kitchens, these long legged things you know, with two tiers of all the kitchen stuff hanging on hooks underneath these two tiers and so on. You'll see in that journeys to, to the north pictures of, of some of the camp sites that we had there.

Q What were they working on?

Well, they were really working on trying to see whether that whole area perhaps would make a good wilderness area to set up as the artic national wildlife refuge or range or whatever it was being called at that time and so the, what was it, the New York conservation society I think or national, I don't know off the top of my head, I can't remember all those organizations. They sent him up and sponsored him financially, a couple of organizations including the Wilderness society I'm sure and sent us up there and we landed on the ice of this one lake that was right at the entrance, the main entrance to the, the, the Brookes range park of the Shenjec river which is the eastern Brookes range and drains down into the Porcupine river which then drains down to Fort Yukon and the two guys, three guys went up there first and then I flew up a day or two later with the Marys and we landed on the ice even in that length of time there was quite a moat that had developed around it and so we had a time getting some of this stuff off but we did and the plane took off on it's skies and then O.S. the next morning said, Okay, he said your job this summer is to get as much out of it as you can. He just wanted to see what could be made out of someone that was just going to sit around up there or hike around. George Shallor wore out at least two pairs of shoe packs,

he did so much traveling by foot. So, I collect plants. I collected small mammals. I collected birds. George as I say he walked and walked and walked the ridges, he just loved to get up there with the sheep and the bears and what have you and in total we had a wonderful, wonderful summer up there. It was kind of fun because the, the sun would set about six times a night because it would go behind that peak and come out again and it would go behind that peak and come at again and that peak and come out again and the area had still not been mapped completely by the USGU and there was this big mountain right near camp that we, I don't know, we talked down and low and behold there was a valley that we didn't know anything about that went horizontal to the Shenjec and around that mountain and came out the other side. During the summer the USGS flew in up there and they were actually doing the photos to do the final mapping of, of that area.

Q What do you think of the controversy of drilling up there and what's happening now.

I just think it's a travesty because you know, they say, the oil companies always say, oh, well we've learned a lot now, we can do better this time and then when they get a spill, oops, you know, but the damage is done but that's not the only thing. It's probably relatively small in the total picture of things but the people that are doing that kind of work and saying it isn't going to damage don't know what wilderness is. They don't know when you walk up on the crest of the Brookes range and look off the Brookes range to the artic ocean what a derrick would mean there, right in the middle of everything. Yeah, I know it doesn't, it's just not appropriate for, for a wilderness concept but they've never had this, these kinds of experiences and so they don't understand what wilderness really is, this way you can talk yourself blue in the mouth and they still say of course we can do it, we're getting better all the time. We can do it on these pads and pull our stuff out, only these little pads will be left and so on but it's not the same. I knew one group a Dad and three boys Brokal was his name, they were from Philadelphia

and these, oh, they were all six feet, longer legs, I swear and they walked all the way up the south side of the Brookes range and over the other side and down the other side to the artic ocean, what would they have thought if they had seen oil up there on those flats, it just would not have done it. Those kinds of special values so few people have had an experience, some of them would hate it too. And so it's a very hard fight to, to try and maintain it.

Q My sense is you can always wreck it in the future, why wreck it now?

That's my feeling too, yeah, that nothing is going to happen, it's just these people that want the money from drilling, the corporate type and nothing is going to happen to that oil, I don't think and all the time they are finding new ways of doing things like putting in horizontal piping and can suck that oil up without having to even touch the surface of it and so --

(Side B)

Q What changes have you seen?

Well, you know it's kind of hard in some ways to know whether we've seen changes or whether we've been here long enough now to know what birds are really here even though they are not here every year. I know that Dan Gibson, my colleague discovered when he was taking some birding tours, clear out to Atto and they discovered out there that they like cloudy days, foggy days even because the birds that were flying from southeast Asia would take out over the water on their way to the Tucas peninsula and they'd go right over the end of the peninsula. Well, everybody got so excited you know, these people that build their life lists you know, they wanted to go out there and just build their life lists and so and Dan enjoys that too so he took troops out there for a number of years and then his wife is a wonderful cook and she was cooking out there and he was birding out there and, and on the QT was collecting birds for documentation and

it seems that the whole western third of the Allusions it's more likely that you'll find Asiatic species there then you will north American sub, species even, north American sub species and I was checking through some of the bird, going back to Scop again I was checking some of the bird banding records and discovered that people had been making a mapping error with the Scop that had been caught and banded at Anchitka when, I guess it was when they were out there doing a lot of the atomic energy stuff and they were doing environmental impact stuff and they hadn't paid any attention to the return data on those, that it was, it was east in stead of west and so these, these chicks had been flying across the straights and down the Camp chatka peninsula where they were shot down in the southern camp chatka area which was kind of fun to know that we have even Asiatic Scop that are being bred in Alaska. So, you earn learn all kinds of interesting things if you've got your eyes half open.

Q Say a few words about Pete Islib. Yeah. Pete was a marvelous guy, obstensively he was a fisherman by trade but he was brought up in Connecticut at Roger Torry Peterson's knee and so he was really, really sharp on his birds and just to keep himself happy as he was running trans, running fishing things across the Prince William Sound, he's keep track of all of his bird stuff and I don't know how I learned this but about the time that they were going to put in the pipeline to come out of Valdez I had learned about this and I said Pete, you've got to get that stuff into publication before the oil starts to flow and of course he had, I think he finished high school but that doesn't help you when you are expository scientific writing particularly and so he would sit down there and write up stuff, put it all together of one species and then the next species and so on and he'd send it up to me. It was all in pencil and I would hand it to my secretary. I was a dean of the collage, biological sciences and renewable resources at that time and so I had secretaries, the only time in my life I have and I would hand, I would hand her these rough notes and she would type it all up and I would go through and edit it and then send it back to Pete and that guy learned so fast it wasn't any time at all but what he wasn't writing really good accounts of the birds

and things that he had seen. It was, it was just marvelous bringing him along on that sort of thing but he was still primarily a fisherman and oh, I miss him, still to this day. He was killed in a fishing accident out at Dillingham.

Q Have you seen changes in people's appreciation of birds?

Oh yes.

Q Are there more birders and talk a little bit about that.

I don't know about my relationship to it but as a professor here I would work, we had a student organization called the Fairbanks bird club. It was run by the students out here at the University but it included a lot of people from town but because it was from University students it was more of a scientific and not just a beauty travel log kind of thing and, and so we had also, we had field trips. We take out the garden clubs and we'd take out anyone that wanted to come out, we'd meet them here, out here in the west ridge at 5:30 in the morning if they wanted to come and we'd take them out for two or three hours down at Smith lake or you know, wherever we wanted to go and to this day, I meet people in the post office and in the grocery stores and things and say how wonderful it was for their kids and for them to have learned something about the birds because the birds are something that catches people. They have the same, well, not the same but similar sensory receptors, the eyes see color and the ears are, sound and, and we're of the same ilk and so you see these people that like to feed birds at feeders and the (inaudible) with them which is fine and I always say I don't care why they like birds just as long as they like birds because it immediately begins to expand their horizon and I felt that I had arrived after I taught ornithology here that I'd be walking up the hill behind some students and I would see them stop and look up and so I knew that I had arrived, they were that much more sensitized to their environment and so I really enjoyed that aspect of, of my work, the pre-eight o'clock work.

Q It's my sense that today's bird counter, bird list maker is tomorrow's advocate for the environment.

Oh, no question, no question. It's a different kind of an advocate. There's some of these people that all they want to do is to check it off and go on and we've had one or two people that were wonderful birders, there was this, this guy that worked out at the musk ox farm when it first started and he was so sharp but we couldn't get him to sit around and enjoy it afterwards, after finding the birds, he's check it off and want to go on to the next thing but we got him, we got him pretty well taken care of too and one of my most fun experiences was when I was able to go out with this fellow and Dan Gibson and spend a week on Shimea with them. Oh, I was, I was just in glory because these people are so much sharper then I ever was. They've been working on it for so many years and Dan would study the Russian books and know what to expect, he was ready so that when something went flip, something went flipping past he'd know what it was, I might have just barely seen the darn thing but pretty soon with his little sticker sneeze he'd bring the thing back by the tweet and we could all, we could all learn what it was. It was a wonderful experience to be in the field with those, those two people in new country out there the Shimea for me which was as far out in the Allusions as I've been now.

Q Was it harder then you make it sound to overcome the hurdles of being a woman in a man's field.

No, I think, if you work hard enough and have the talent and you're vitally interested in your subject, these women that go out to flirt with the men and are not really serious about it, they have, they have a lot more trouble getting out into the field except that the Fish and Wildlife Service particularly put a real emphasis on getting women out but they always insisted on putting two together in the field and that sort of thing so they'd have company with each other. One of, one of my

experiences was project Chariot, have you ever heard of that, that was atomic energy commissioned attempt to, peaceful uses of Atomic energy to build a harbor up near Cape Thompson and they came and they wanted, they came here again to try and get the University of Alaska involved with that and they were brought to me as department head at that time and said, I talked to her? They were really taken aback, they had never had women in the field before. And so they were stuck with it, if they wanted the University of Alaska people up there they were stuck with poor Brina and so I was in charge of the University of Alaska projects up there and we had three staff members at that time and so we hired more and started some real nice studies, caribou studies, Pete Lent, he did, he did the caribou study up there. Pruitt did most of, a lot of small mammal stuff and also big mammal stuff, Lent worked under him. But, I, I was really kind of tickled that I sent to women up to the field also because I was in charge so they just knew they had to accept them and one was a woman that I really had never met before but she was an awfully good botanist, she'd had her training at Wisconsin under some of the goody colleges and she came, she said yes, she'd love to come up. Well, she arrived in Fairbanks, she had just jumped off the tail end of her pickup truck and broken her leg and so she's put her jeans on and made zippers in the side of them and wore her cast up there and showed up on project Chariot's site with a broken leg and then the student that I had going up there she came to me just before she was ready to ship out and asked, she said I'm pregnant and I said well, how do you feel? Oh, great. Do you want to go up?

Well, I asked her whether she thought she could handle the work up there. She was going up as an assistant to the memologist to help with some of the small mammal work up there and so what she did was she took a number of different sized of blue jeans up with her and as she enlarged with her pregnancy she just put on a bigger pair of blue jeans, they never knew. And so I decide the AEC just really didn't understand us women at all. That was back in, what was that? '59 to '63 about back in that period of time but the women are doing real well now, I think relatively speaking. There is, there is some hidden prejudice against having

the women in the field but there are an awful lot of goods ones now that are doing good work in the field.

Refuges have, have hired them and so on.

Q The Fish and Wildlife Service had become a matriarchal society I think.

Tough bananas. Well, I admit that the pendulum sometimes has swung too far. Don't hold that against me.

Q Birds of the Seward peninsula?

Yeah. I told you or did I that I was essentially a tundraphile and in '67 I was dean of the college of biological sciences at that time and by the end of the semester I could just practically tear my hair out because I just needed to let off air and so I, I went up one summer to the Seward peninsula and John Burns let me take the Fish and Wildlife truck, it was state fish and game I think, truck and let me go out on the roads around there and I just, this was just heaven to me, absolute heaven and so for the next seven years or so I made arrangements with the state road commission people and they would just sign the car over to the University and so I had transportation at least along the road system for several of my trips. Then, we, I wanted to get on the north where there is no, there are no roads or anything else up there and we got a contract with the park service who was trying to get this international park going with Russia and since I was the one that knew the Seward Peninsula I said this is where we aught to go and so I go with this guy that was just a wonderful pilot and he'd put us down in early little diggy pond or creek or anything else there and we'd spend, Dan Gibson was with me and we'd spend two or three days there just hiking the daylights out of ourselves and then they'd pick us up, we'd go on to the next place and on to the next place. I was able to get a pattern of the distribution of these, of the birds. I spent a lot of time and then one year, and then there was a bird, a wonderful bird guy from

Syracuse that was very interested in coming up and so let's see I think he was up here one year with us and we went to Elam and whales up on whale mountain and that sort of thing and then I was going to hit some of the real more out places the following year and he was looking forward to coming with me and I think it was the day or two before I left, he called and said I can't come. He said I've slipped by back and he said I cannot move and I thought Oh, no and then I thought gee, why don't I just go by myself because we had made all these arrangements you know and, and so I did and the fellow, a fellow from Teller who herded, who herded caribou with, with the helicopters killed himself eventually doing that but, but he knew the peninsula like the top of his hands and where the dry ridges are where he could land his plane in old air strips that were still somewhat usable and so on and he'd take me out and, and drop me off at ear mountain, why out there in the west and I'd sit there and watch him take off and he said I'll see you in three days then and I would just walk my legs off for three days through rubble and pile I could have broken my leg and everything else but I never did and I got some wonderful, wonderful stuff. He came in and he picked me up and then he took me to a dome oh, sort of mid way east and west on the northern part of the peninsula. It was just a completely bald dome way, way up high. I found red knot up on the top and if you know anything about their habitat it's about the only place they'd occur there and as he left, he left me a couple of plastic bags and he said just over the edge here, as I flew in I noticed that there was a snow bank where you can get water and he said and I'm going to be flying down to anchorage to pick up a new plane so don't worry if I'm not back here right on schedule. Of course I was supposed to be ready when he came in and I just hoped to goodness that the weather would remain good and it did and then let me see, he picked me up there and flew me to another place just north of York mountain which was more along the south shore but it was a big mountain between me and south shore and yes, he'd be back but this was when he was going to go out and be chasing reindeer, herding reindeer with his helicopter and so he didn't show and he didn't show and he didn't show and of course I was all packed up except for the tent you never pack in your tent until you see the plane

coming and I just waited and waited and waited and he never showed and so finally I got to thinking well, let's see I don't want to be here forever and so I figured I could go over York mountain or at least around the shoulder and get down to the edge of Norton Sound and hail the natives that traipse up and down there but I never had to, he finally, he finally came in and picked me up. Well, he said I was pretty busy. I mean that was all it took to well--

Q Were you ever afraid of bigger mammals around?

Well fortunately that end of the peninsula and up north like that there weren't very many bears and I wouldn't worry about moose, there were moose out there but and a few grizzlies go clear to the tip but I never saw a bear there at that time. And yes, I would have worried about that because the only gun that I really, I carried was an over and under four ten 22 for collecting birds. With the rifling taken out of the 22 barrel so I could use shot in it but I did have a couple of, what do you call them these single bullet things and I just figured that we'd give it the gung ho if I had to but I never had to, no. There was one place on the peninsula at one time that I was very uneasy because there was a bear that was wandering around up there and digging in some of the upland meadows and he kept moving and I was quite a ways from the road and from the car and I just, eventually I just decided that I'd get out of there and so I went down and kept low where the, where you couldn't see me. They haven't got very good eyes anyway and apparently it didn't smell me and I got back to the car, one big sigh of relief.

Q Resulted in a nice publication.

Yeah, I have a copy of that here too. Yeah I, I figured that, well, that was where I really developed my habitat classification system having walked, what did I figure some 750 miles over those summers. What was that? A hundred miles a summer probably and then an equal number by road because there's a, a three branch road system and I traveled those roads and camped along those roads

and I was alone you know. It, there was a few natives and a few minors that would go by and that was it and Al Crane he was always meeting me on the road someplace in the most absurd places even when he got to Fairbanks we were always meeting up in odd places. Me, with a pack on my back going down the side of the road but I was always looking for distribution patterns and after I got through up on the, in the northern half of the peninsula, I redid the main road that ran from Nome up to up north to, to where, there was a wash out up there and you couldn't get any farther up and from my work in the north I predicted that I would find there at the head of the road out of Nome that at the head waters along there I should find the Bristle side curlew and I should find the Blue throat and oh, was I happy when I got out there and found both of them. But I never told anybody about those until years later when I was writing the book I guess and actually I finally broke down and they wanted to go up there and study the Bristle side curlew because they couldn't get it because there are a very limited population here in the country and they had endangered species finds and all that sort of stuff. So, I finally told them and now as a result of the book I'm afraid I'm responsible for a lot of the tourists who go up there because now, and unfortunately they don't add any new data because they look in the book, where about where the mileage is and, and they stop right there and you don't know whether at ten miles on either side or five miles on either side or not but so you kind of damage your information stream a little bit that way too.